University of Essex

The Economic Consequences of Share-Option Based Compensation:

New Evidence from the US and EU Banking Sectors.

By:

Alaa Alhaj Ismail

A thesis submitted for the degree of Doctor of Philosophy in Accounting

Essex Business School

University of Essex

June 2016

Declaration

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgment has been made in the text

Abstract:

The mandatory adoption of IFRS2 and its equivalent FAS123R (*Share-Based Payment*) presented a radical change in financial reporting of Share-Option Based Compensation (SOBC). Both IASB and FASB adopted the view that disclosure is not an adequate substitute for recognition; consequently, all SOBC transactions ultimately lead to expense recognition, measured at the grant-date fair value of SOBC. This thesis identifies and evaluates the major financial reporting implications of alternative reporting methods of accounting for SOBC across a global context and over different time periods for pre and post adoption of IFRS2/FAS123R. It explores two key research questions using an international sample of US and EU banks over the period (2004-2011). The first research question aims to identify, analyse, compare and evaluate the total effect of the compulsory adoption of IFRS2/FAS123R, on selected banks' performance measures. Underpinned by equity valuation and agency theories, the second question aims to assess the extent to which the mandatory recognition approach to expensing SOBC provides more value relevant information that better reflects the incentive properties of such rewards than the disclosure approach. The findings show that the expensing of SOBC has resulted in modest and statistically significant negative effects on both US and EU banks' selected financial performance measures with the impact being more likely to be higher in the US banking sector. The reported modest impact does not reflect earlier research estimations indicating that concerns and criticism of the implementation of IFRS2/FAS123R are largely unsubstantiated. The results also indicate that the recognition regime to expense SOBC is significantly more value relevant and better reflects the intangible value attributable to such rewards, relative to the disclosure regime. The influence of the differences in the financial reporting contexts on the intangible value attributable to SOBC is less burdensome after the mandatory adoption of IFRS2/FAS123R.

Keywords: IFRS2, FAS123R, Share-Based Payments, Banking.

Acknowledgements

All the praises and thanks be to Allah

I am very grateful to my first supervisor, Dr. John Stittle, and my second supervisor, Dr. Idlan Zakaria who took a keen interest in the work and provided detailed and constructive comments and feedback. I also owe a great deal of gratitude to Prof. Claudia Girardone for conducting the mock viva and for her constructive feedback. I would also like to thank my examiners, Prof. Stuart Manson, and Prof. Khaled Hussainey for an intellectually stimulating and enjoyable viva. I am also thankful to the participants in the EAA 37th & 38th Annual Congress, (Tallinn 2014/ Glasgow 2015) for their useful comments. I would also like to thank the University of Aleppo and the University of Essex for providing me with some funds to perform postgraduate studies in the field of financial reporting. I am also thankful to the British Council for providing some financial support, which was crucial for the completion of this thesis.

Finally, I would like to thank my parents, Abdul'hakim and Nazmiyeh, brothers, sisters, Tiffany Tryon, Dr Abdulnaser Humaidan, Dr Mahmoud Ibrahim and all my other teachers for their guidance, support, and encouragement throughout my life – I therefore dedicate this thesis to them, and to the memory of Hasan Khalaf, Mahmoud Najar, Razzouk Obaid and all students and friends who lost their lives in the Middle East conflict.

Table of Contents

List of Tables

Abbreviations

APB (25): Accounting principle Board No. 25.

EBF: European Banking Federation

EC: European Commission

EU: European Union

FASB: (US) Financial Accounting Standards Board

FAS123: Statement of Financial Accounting Standards 123 (1995), *Accounting for stock-based compensation*

FAS123R: Statement of Financial Accounting Standards 123 (Revised 2004), *Share-based payment*

IAS: International Accounting Standards

IASB: International Accounting Standards Board

IFRS: International Financial Reporting Standards

IFRS2: International Financial Reporting Standard IFRS No. 2 (*share-based payment*)

SOBC: Share-option based compensation

Chapter 1: Introduction

1.1 A background to Share-Option Based Compensation and its accounting regulations:

Offering Share-Option Based Compensation (hereafter SOBC) as a component of employees' and executives' remuneration packages has become more popular among US public companies since the late 1990s[1] (Core *et al*., 2002, Street and Cereola, 2004; Mehran and Rosenberg, 2009), and since the early 2000s in the EU[2] (Pendleton *et al.*, 2002; European Commission, 2003). In a SOBC arrangement, a company issues equity instruments to its employees at many levels of employment as a component of their incentives packages. The issued equity instrument gives the employee the right but not the obligation "to buy a share of stock at a pre-specified "exercise" price for a pre-specified term" (Hall and Murphy, 2003, p. 2; Sacho and Oberholster, 2005). SOBC packages commonly include share options, in addition to other similar equity awards, such as share purchase plans, as well as cash-settled awards where the cash payment depends on the share price as in the case of share-appreciation rights.

The widespread use of SOBC, as incentives schemes, was influenced by many factors; but mainly by companies' desire to attract and retain highly talented executives and employees (Kedia and Mozumdar, 2002), to motivate and compensate them for enhanced future performance (Core and Guay, 2001), and to conserve cash outlays (Yermack, 1995; Core and Guay, 2001). Another key reason for the significant growth of SOBC was

[1] The National Centre for Employee Ownership estimated that almost 3 million employees received options as part of compensation in 2000, up from less than a million in 1990 and that about 10 million employees held stock options in that year. A survey conducted by William M. Mercer in 1999 found that the percentage of granted stock options in large US firms to at least half of their employees increased steadily from 17% in 1993 to 39% in 1999 (cited in Core and Guay, 2001).

[2] Stock options have been used in France and the UK for somewhat longer (For further details, see European Commission, 2003)

that no compensation expense had to be recognised in the income statement for most SOBC plans prior to the introduction of the international accounting standard IFRS2 and its US equivalent FAS123R (*Share-Based Payments*) in 2004[3] (Matsunaga, 1995; Botosan and Plumlee, 2001).

The mandatory recognition approach to accounting for SOBC was first proposed in 1993 when the US Financial Accounting Standard Board (hereafter FASB) issued an exposure draft of Financials Accounting Statement FAS123 (*Accounting for stock-based compensation*). This draft raised one of the most prolonged and controversial debates over the history of the standard setters, particularly the FASB as it proposed "one of the most radical changes in accounting rules" (Hagopian, 2006, p.146; Farber, *et al*., 2007). In 1995 and due to political pressure from Congress and the business community[4], the original draft of the mandatory adoption of the recognition approach to account for SOBC was amended. Companies were only recommended to elect the recognition approach under FAS123. Alternatively, if FAS123 was not voluntarily adopted, SOBC expense by way of pro-forma disclosure within the footnote of the financial statements was required (i.e. if FAS123 would have been in use). However, the majority of US companies chose the second alternative of the pro forma disclosure, because it was perceived that the cost of the recognition would be higher than the cost of the other available choice (Botosan and Plumlee, 2001).

The recognition approach would primarily reduce the amount of the reported earnings and ultimately cause deterioration in a variety of performance measures. This argument

[3] IFRS 2 was first applied to accounting period starting on 01st Jan 2005. FAS 123R was first applied to accounting periods ending in 2006

[4] Farber, *et al*. (2007) pointed out that there was such strong political pressure opposing this draft that a robust congressional intervention was required to prevent the FASB from moving ahead with mandating the proposed standard. Furthermore, only one month after issuing the Exposure Draft, 1,700 comment letters had been sent to the FASB, 1,000 of these letters were from employees of companies more likely to be considerably affected by the passing of this draft.

was supported by a number of studies that estimated the impact on the reported earning prior to the mandatory adoption of IFRS2/FAS123R, using pre-adoption data from the pro-forma disclosure, and that looked at companies position in different countries (e.g. Botosan and Plumlee, 2001, Street & Cereola, 2004; Chalmers and Godfrey, 2005; Saiz, 2003; Apostolou and Crumbley, 2005). Additionally, the recognition approach to expense SOBC might affect companies' use of SOBC, as companies are likely to discontinue share option programs if they were forced to include the value in net income (Ratliff, 2005, p.39).

Opponents of the recognition approach to account for SOBC also believed that mandating this approach would be unnecessary (see e.g., Rouse and Barton, 1993; Derieux, 1994; Ratliff, 2005 and Aboody *et al.*, 2004a). Firms were already disclosing the dilutive effect of SOBC grants on the earning within the footnotes of the financial reports using the pro-forma disclosure. The recognition approach would, therefore, neither significantly influence how market participants perceive the cost associated with SOBC grants, nor affect investor's perception to the incentives derived from these grants that aim to attract and motivate talented employees. That is, there should be no difference between the information content of recognised SOBC expense and that of the disclosed SOBC expense.

The absence of an accounting standard addressing SOBC in other countries was also of particular concern though it was not as contentious as in the US, as the use of this form of compensation outside the US had increased substantially in later years. The use of SOBC has become popular since the early 2000's for much of Europe, particularly the 15 EU countries (See Pendleton *et al.*, 2002; European Commission, 2003; Street and Cereola, 2004). One of the main reasons for the widespread use of SOBC in EU countries

is the removal or the release of legal restrictions on SOBC, and particularly to enable firms competing globally[5].

Financial reporting regulations in much of Europe at that time varied from country to country, but generally, they did not require SOBC to be treated as an expense, nor was there a pro-forma disclosure requirement. For example, some EU countries such as the UK, only recommended firms disclosing details of shares granted to each director in the annual reports (Shiwakoti and Rutherford, 2010). In Italy, the disclosure was only limited to quantitative information about the number of SOBC and their variations during the year, without any communication regarding their fair value (Corbella and Florio, 2010). It seems, in the EU, more emphasis was given to openness and disclosure of information than how this would be accounted for. As a result, unlike in the US, not even pro forma statements by way of notes to the financial statements were required in the EU. However, this did not satisfy the proponents of expensing and the debate continued.

As SOBC schemes were becoming more popular, the accounting profession and the financial community became more concerned about the inconsistency and the inadequacy of the disclosure or the "free to grant" approach to account for the cost associated with SOBC plans. Warren Buffett, a leading investment fund manager, summed up the issue as following:

> "If options aren't a form of compensation, what are they? If compensation isn't an expense, what is it? And if expenses shouldn't go in the calculation of earnings, where in the world should they go?[6]"

[5] For example, around 90% of FTSE 100 companies granted share options for its top executives after the passage of the UK 1984 Finance Act. Furthermore, issuing share options in Germany and Finland, particularly to executives was only legal in 1998 (Ratnesar, 2000). Other EU countries such as Belgium, the UK and the Netherlands also revised their tax laws to make share options appealing to corporate boards and executives (for more detail see, Ratnesar, 2000; Pendleton *et al*., 2002; European Commission, 2003, Street and Cereola, 2004). The removal or the release in legal restrictions on granting SOBC has facilitated the widespread use of SOBC in EU countries.

[6] This is taken from Buffett's Letter to Shareholders of Berkshire Hathaway Inc., 1992.

Following the Enron, WorldCom and other US financial and accounting debacles[7], the controversial debate over the accounting for SOBC became heated and attracted widespread criticism. Sir David Tweedie (2002)[8], former chair of the IASB considered that "Enron was brought down by share options… [T]he sheer greed of hidden numbers".

By the end of 2004 and after nearly a decade of that controversial and intense debate, both the International Accounting Standards Board (IASB) and the US-FASB consequently responded to criticisms raised over the disclosure approach. Arguably, the disclosure approach resulted in ultimately overstated and distorted reported earnings that did not faithfully reflect the underlying economic reality or a 'true and fair' view of companies' financial positions. On 19th February 2004, the IASB released IFRS2, which was first applied to accounting periods starting 1st January 2005. The standard mandatorily required the fair value of share options and other share-based grants, measured at the grant-date, to be deducted as an expense from the companies' income statements over the vesting period[9]. According to the IASB, IFRS2 provided a unique opportunity to assume leadership by issuing a high-quality standard that would be a benchmark for international convergence (IASB, 2002). Indeed, in December 2004, the FASB released SFAS 123R (*Share-based payment*), as one of earlier international accounting standards that have been closely converged by the IASB and the FASB. SFAS 123R also mandatorily required firms to recognise the grant-date fair value of share-based payments as an expense over the vesting period. The standard was first applied to accounting periods ending in 2006.

[7] Share options lies at the core of the corporate morality of the US-based Enron, WorldCom, among others. These debacles had been linked directly to excessive risk taking along with excessive share price fixation; both arguably resulted in increasing stock option grants. These companies have also attracted public concern on problems associated with other accounting practices.

[8] Speech by Sir David Tweddie, Sydney, Thursday, 15 August 2002. Available at http://www.frc.gov.au/speeches/tweedie_speech.asp.

[9] The standard required companies to prepare comparator figures for the earlier year. Further, all option grants awarded after November 2002 with first vesting after 1st January 2005 were required to be included in the charge to profits.

1.2 Research Objective

The introduction of IFRS2/FAS123R presented an exogenous shock that radically changed accounting for share-based payment[10] on an international level. The view adopted by both the IASB and FASB that all SOBC transactions ultimately lead to expense recognition came after an extraordinarily controversial and prolonged debate on the accounting treatment for SOBC. Yet the financial reporting implications surrounding the recognition versus the disclosure approach to the cost associated with SOBC in the financial statements remains a subject of widespread discussion internationally, even after the mandatory adoption of the new accounting standards pertaining to SOBC by two major accounting standard-setters. The main argument of both the IASB and FASB to support mandating the standards is that non-recognition of the cost associated with SOBC in the income statement will obscure the information contained in the financial reporting and undermine its reliability, value relevance, and comparability (FASB, 2004, IASB, 2004).

> "Recognizing compensation cost incurred as a result of receiving employee services in exchange for valuable equity instruments issued by the employer will help achieve that objective by providing more relevant and reliable information about the costs incurred by the employer to obtain employee services in the marketplace". FASB (2004: v)

Converging the accounting treatment of SOBC transactions between IASB and FASB was also another explicit objective of mandating IFRS2 and FAS123R. The convergence process mainly aims to enhance the international comparability in accounting for SOBC transactions.

> "Converging to a common set of high-quality financial accounting standards for share-based payment transactions with employees improves the comparability of financial information around the world and makes the accounting requirements for entities that report financial statements under both U.S. GAAP and international accounting standards less burdensome". FASB (2004: ii)

[10] IFRS 2 and FAS123R covers accounting for all types of share-based transactions in which the entity receives goods or services either as consideration for its equity instruments or by incurring liabilities for amounts based on the price of the entity's shares or other equity instruments of the entity. In this study we examine only share-based payments to directors and employees as the most common beneficiaries of share-based payments.

Expanded disclosures and reporting practices prior to IFRS2/FAS123R, and mandatory expensing of SOBC after IFRS2/FAS123R provide a sound setting for comparing the benefits and costs of alternative reporting methods along with their valuation implications on a wider international context.

This thesis aims to identify and evaluate the major financial reporting implications and the economic consequences of alternative reporting methods of accounting for SOBC by utilising pre and post adoption data of IFRS2/FAS123R as applied to a single industry and across a wider global setting, the EU and US banking sectors. The focus on these two distinct international markets, the US and the EU, can indeed be informative because it puts the impact of adoption of a closely converged international standard into a global context and benching two internationally active and peer markets that first adopted IFRS2/FAS123R (the reasons for choosing the US and EU banking sectors are further discussed in section 1.4). This thesis distinguishes primarily between pre and post adoption periods and between US and non-US studies to highlight the gap that US and pre-adoption studies dominates the existing literature, whilst non-US and post adoption studies, and in particular studies on the effect of IFRS2/FAS123R on the wider international scale are not common. Healy and Palepu (2001, 414) highlight the necessity for additional research that evaluate the benefits and costs of alternative reporting methods where the findings are likely to provide useful evidence to standard setters. It is believed that the findings of such research would broaden the extent of our knowledge regarding the international financial reporting implications of alternative reporting methods; particularly by investigating whether the implications of different accounting practices prior and after an accounting event can noticeably differ or be remarkably similar, and across different research sites and periods of investigation. The research

objective of this thesis is tackled through two main research inquiries, which are discussed along with their motivations in more details in the next sections.

1.3 Research Motivations

SOBC has been widely accepted as compensation mechanisms used by companies to attract and retain highly talented employees, and to motivate future performance. SOBC enhances employees' efficiency by actively engaging them in the decision-making process and ties their interests with those of shareholders (Landau *et al.*, 2007). Cash outflow in terms of cash compensation can also be replaced by the use of option grants, particularly for start-up firms and those that have liquidity constraints (Core and Guay, 2001).

However, an equally important accounting issue, which fostered one of the most prolonged and controversial debates in the history of the standard setters, is to evaluate not only the benefits of, but also, more importantly, the full extent of the cost associated with SOBC. This cost should also be fairly reflected and captured by its accounting treatment within the financial statements of companies. The accounting treatment of SOBC should also provide market participants with more relevant and reliable information that reflects the intangible implications of the incurred cost.

SOBC expense compared to other operating expenses has a unique characteristic. SOBC schemes are usually designed to motivate employees and manager and to drive companies' future performance over the long-term. The role of SOBC in driving companies' future performance over the long-term is associated with an extra market risk factor. Market participants are expected to compensate the associated expense of SOBC compared to other operating expenses such as salaries or bonuses which are paid based on the past services or performance. SOBC is, therefore, expected to be valued as an intangible asset that contributes to a better future value of companies. As such, the long-

term intangible feature of SOBC should be effectively captured by market participants through the lenses of the accounting treatment of SOBC.

This thesis mainly relates to two streams of accounting literature, i) the impact of expensing SOBC on a company's selected financial performance measures and ii) the debate over the value relevance and the information content of the recognition versus the disclosure approach to expensing the fair value of SOBC.

1.3.1 The impact of expensing SOBC on selected financial performance measures

The first stream of literature this study relates to is mainly concerned with the materiality of the negative effect of expensing SOBC on a company's reported earnings and other related financial earnings indicators. The mandatory recognition of this expense would most likely reduce companies' reported earning substantially, and to distort companies' accounting performance measures significantly. Financial indicators, such as earning per share [EPS], return on assets [ROA], and return on equity [ROE] are widely used in different contractual specifications, such as variable compensation contracts[11]; and also in estimating firm's value and its future cash flows as well as in determining its access to capital markets. Standards setters, investors and other interested parties in financial accounts and related corporate governance issues must consider the negative effects of IFRS2/FAS123R to determine the costs from using SOBC plans.

The majority of the existing studies had estimated the effect of the mandatorily expensing of SOBC mainly by utilising data prior to the mandatory adoption of IFRS2/FAS123R (e.g., Botosan and Plumlee, 2001; Saiz, 2003; Street and Cereola, 2004; Chalmers and Godfrey, 2005). Furthermore, all these studies reported non-compliance in some aspects of their sample with SOBC disclosure requirements. Some studies also assumed that

[11] Accounting performance indicators such as ROA, ROE, EPS, are one of the basic motivation aspects used to determine the amount of compensation in the variable compensation contracts.

SOBC were granted only for directors and the five most senior executives (Chalmers and Godfrey, 2005). The majority of these studies also assumed that the estimated effect of expensing SOBC would increase yearly to be double or triple of the estimated reported effect, and the effect would stabilise when the option life cycle is completed[12], assuming that SOBC is granted at a relatively fixed level. However, Seethamraju and Zach (2004) and Ratliff (2005) argue that companies may respond to IFRS2/FAS123R by reducing SOBC grants to avoid the effect of the mandatory expensing of SOBC on their financial ratios.

Indeed, the limitations of utilising pre-IFRS2/FAS123R adoption data along with the non-compliance necessitate the need for additional research to examine the impact of this international standard [IFRS2/FAS123R] utilising a broader international sample and time-span, more performance measures, and post implementation data (Buston and Plumle, 2001; Street and Cereola, 2004; Chalmers and Godfrey, 2005). Later on, only two recent studies in responding to this need have sought to identify the effect of mandatory adoption of IFRS2/FAS123R on selected performance measures once it was adopted in the US and the UK. These studies were conducted by Schroeder and Schauer (2008) and Shiwakoti and Rutherford (2010) respectively. Yet these studies were constrained by utilising one and two year's post-adoption data respectively, using fewer performance measures and focusing on one single context, the US and UK to examine the impact of IFRS2/FAS123R.

Firstly, utilising only a one-year period neglects the impact of option life cycle and management discretion, particularly over the options' life and the vesting period. Pre-IFRS2/FAS123R adoption literature, such as Chalmers and Godfrey (2005), Buston and

[12] Botosan and Plumlee (2001) argue that the option life cycle is usually three years. Therefore, if share options are granted yearly at a fixed level, the expense will be double and triple in the second and the third year respectively compared to the expense calculated in the first year of issuing share options

Plumle (2001, p.325) and Dechow *et al*. (1996) predicted that the expense of SOBC grants for firms issuing these grants at a steady level would increase significantly over time and it would stabilise at the end of option life cycle which takes usually three to five years. Dhar and De (2011) also suggest that management discretion, particularly over expected option life, might be one of the factors that negatively affects the reliability in measuring SOBC expense, and consequently contributes to misestimating the impact over a given year. Additionally, one warranted factor which is expected to influence the effect of expensing SOBC plans is the companies' incline to curtail their SOBC programs in order to reduce the expense required by the mandatorily adoption of IFRS2/FAS123R (see Ratliff, 2005).

That is, covering a longer time-span compared to earlier literature allows this study to address factors warranted in the existing literature, such as option life cycle (Buston and Plumle, 2001; Chalmers and Godfrey, 2005; Shiwakoti and Rutherford, 2010), management discretions (Dhar and De, 2011), and the extent of curtailing SOBC programs (Ratliff, 2005). It also helps to diminish the random 'noise' in the reported estimations of earlier studies for the total effect of expensing SOBC given the impact of the option life cycle and the shorter life span in much of these studies.

Secondly, it is believed that the effect of the IFRS adoption in general (Branson and Alia, 2011; Nobes and Parker, 2013) and IFRS2/FAS123R, in particular (Street and Cereola, 2004) is more likely to vary, depending on the specific context influenced by different institutional factors governing the financial environment. The only study that discussed and estimated an initial generalisation across countries was conducted by Street and Cereola (2004) using one year pre-IFRS2/FAS123R adoption data for a sample of companies listed in the US but domiciled in other countries. Motivated by expanded disclosures and reporting practices prior and after IFRS2/FAS123R, the thesis adds to

earlier literature by using a pre and post adoption international sample that covers a longer time-span, and by controlling for the differences in the institutional reporting settings. It, therefore, adds a wider external validity for assessing the impact of IFRS2/FAS123R on the wider international setting.

1.3.2 The value relevance and the information content of the recognition versus the disclosure approach to expensing the fair value of SOBC

The widely spread separation of ownership and control in business enterprises has resulted in the emergence of two groups, the principles group "without appreciable control, and the agents group without appreciable ownership" (Berle and Means, 1932, p121). Agency problem arises from the more likely self-interest conflicts of these two groups. Both the principle and agent are usually self-interest utility maximizers and more likely to have different interests (Jensen and Meckling, 1976).

Agency theory that views a business enterprise as a nexus of defined contracts between resource holders suggests awarding managers and employees with SOBC as an effective incentive instrument that aligns their interests with those of shareholders, and eventually mitigates the agency problem (Jensen and Meckling, 1976). Indeed, earlier studies such as Core and Guay (2001) found evidence that SOBC is mainly granted by companies to attract, retain and motivate talented employees and align their interests with those of shareholders.

More precisely, the role of SOBC in mitigating the agency problem becomes clearer by the willingness of those talented managers and employees to be compensated based on the long-term future performance and service. The role of SOBC in driving companies' future performance over the long-term is associated with an extra market risk factor. Market participants are expected to compensate the associated expense of SOBC

compared to other operating expenses such as salaries or bonuses which are paid based on the past services or performance. SOBC is expected to be priced by market participants as an intangible asset that contributes to a better future value of companies (Rees and Stott, 2001).

The accounting measurements and treatments of SOBC are also supposed to assist market participants to capture the "intangible" effect of the recognised expense of SOBC, and to reflect it in the equity value of the firm as a value-increasing asset. Earlier bodies of literature, which mainly used pre IFRS2/FAS123R adoption data to investigate the relevance and reliability of the disclosed fair value amount of SOBC found concrete evidence that this amount was perceived significantly negative [as expenses] by market participants (e.g. Aboody, 1996; Chamberlain and Hsieh, 1999; Li, 2003; Aboody *et al*., 2004a). That is, under the disclosure approach, investors assign higher weightings to the dilutive associated cost of SOBC versus their incentive effect. This finding might also implicitly suggest that the disclosure approach fails to reflect the long-term "intangible" effect of SOBC on the financial statements.

The mandatory recognition regime to expensing the estimated fair value amount of SOBC aims to provide "more relevant and reliable information", to market valuation (FASB, 2004; IASB, 2004). Revealing more transparent and credible information about the aspects and incurred cost of SOBC also implicitly suggests that investors now may be able to capture the "intangible" effect of SOBC and reflect it in the equity value of the firm as a value-increasing asset

The overwhelming majority of the existing academic literature that assessed relevance and the reliability of the recognition and the disclosure approach to expensing the fair value of SOBC is conducted mainly within the context of the US (see, for instance,

Aboody, 1996; Rees and Stott, 2001; Bell *et al*., 2002; Aboody *et al*., 2004a; Aboody *et al*., 2004b; Balsam *et al*., 2006), and using pre-IFRS2/FAS123R adoption data. The prevailing conclusion of these papers provides mixed evidence on the value relevance and the information content of the recognition approach to expensing the fair value of SOBC in respect to investors' valuation relative to the disclosure approach. Yet the need for additional research was necessitated to cover the limitations of using pre-IFRS2/FAS123R adoption footnote disclosure along with short-term data (Rees and Stott, 2001, p. 115). Aboody *et al*. (2004a: 274), for example, maintained that "inference related to the perceived reliability of disclosed but unrecognised SFAS123 expense may not be generalisable to an expense recognition regime".

Furthermore, the convergence process of IFRS2 and FAS123R aims to mitigate the international differences in measuring the cost associated with SOBC grants, and thus to deliver more reliable and useful information to market participants across all the settings that adopted these standards. However, the desired impact and the economic effect of accounting practices, including that of SOBC, is more likely to vary internationally depending on the specific contextual factors governing the financial environment (Street and Cereola, 2004; Ball, 2006). Kanagaretnam *et al*. (2014) add that accounting information quality of banks tends to vary with institutional factors across countries. The differences in institutional contexts may also affect the valuation weight placed by market participants on the incentive value derived from SOBC. Hung (2001) documented in his international study that the nature of the legal system measured by the level of investors' protection in a country improves the value relevance of accounting information under the accrual accounting system. Ball *et al*. (2000:2) concluded "enhanced common law disclosure standards reduce the agency costs of monitoring managers, thus countering the advantages of closer shareholder-manager contact in code-law countries". That is, market

participants in common law countries should be able to interpret the recognised expense of SOBC grants and identify marginally more incentive feature from these grants, where these grants are arguably used to reduce agency costs and are more likely to be subject to a lower level of management discretion.

Such an argument questions whether market participants can effectively interpret the fair value expense of SOBC recognised in banks that operate in different institutional contexts. Lower level of investor protection might imply a higher probability for management discretion tendency and to use SOBC opportunistically as a way to reward managers and employees (agents) their part of the profit. This implies the level of investor protection may significantly influence the value relevance and the information content of SOBC expense reported under the fair value approach of IFRS2/FAS123R. The observed market valuation of the incurred expense of SOBC under alternative reporting methods and across different reporting environment will add to our understanding of the value implications of SOBC in the wider international setting. It adds to earlier literature and further develops whether the disclosure of SOBC expense is an adequate substitute for recognition in diverse jurisdictions. It also provides evidence on the extent to which the findings of the US-focus research conducted prior to mandatory adoption of FAS123R is valid using pre versus post adoption research design over an extended period (2004-2011), and across different settings that have their unique institutional environment and have adopted the international converged version IFRS2.

1.4 Research inquiries:

This thesis aims to identify and evaluate the major financial reporting implications and the economic consequences of alternative reporting methods of accounting for SOBC by utilising pre and post adoption data of IFRS2/FAS123R as applied to a single industry

and across a wider global setting, the EU and US banking sectors. It mainly considers two key research inquiries.

The first research inquiry of this thesis is

1) To identify, analyse, compare, and evaluate the total effect of the compulsory adoption of IFRS2 and FAS123R on selected performance measures within and between two distinct settings: the US and EU banking sectors using pre and post-adoption data.

This thesis examines and compares the average extent of the changes in selected financial ratios due to the mandatory adoption of IFRS2/FAS123R. It also analyses the individual yearly behaviour of this impact over an extended period of years (2004-2011). This allows a better view on the influence of the option life cycle and the financial crisis, along with the scope for management discretion that exists in some accounting requirements of IFRS2/FAS123R on the reported impact. The difference in the change (Δ) of the selected performance measures over the period, 2004-2005 for EU banks and 2005-2006 for US banks, due exclusively to the mandatory introduction of IFRS2/FAS123R is also evaluated[13]. The study also provides evidence on the extent to which banks have curtailed their SOBC schemes in order to reduce the expense required by the compulsory IFRS2/FAS123R. More importantly, further evidence is provided on the structure of SOBC expense, particularly the recent gradual movement toward using cash-settled based compensation because of its flexible and attractive accounting requirements. Finally, the effect of IFRA2/FAS123R is examined and compared within and between US and EU banks after controlling for different characteristics of banks and their operational structure (e.g. banks size, banks potential growth rate, and the differences in

[13] The difference in the studied periods for the EU and the US is due to the effective date of IFRS2 and FAS 123R. IFRS 2 was first applied to accounting period starting on 01st Jan 2005. FAS 123R was first applied to accounting periods ending in 2006

banking activities). As an additional analysis, the impact is also identified, compared and evaluated for banks domiciled in codified-law versus common law countries, and after controlling for different characteristics of banks.

The second inquiry of this thesis is:

2) To assess the extent to which the recognition approach to expensing the fair value of SOBC under IFRS2/FAS123R provides more value relevant information that better reflects the intangible value of such rewards than the disclosure approach, in an international sample of EU and US banks.

The thesis provides evidence on the extent to which mandating and converging the IFRS2 and FAS123R has resulted in enhancing the perceived quality of financial reporting through "providing more relevant and reliable information" to market participants. It also assesses whether the differences in the institutional environment of financial reporting significantly influence the value relevance and the intangible value attributable to SOBC prior versus after IFRS2/FAS123R adoption. It is argued that the market will regard as less relevant fair value estimates of SOBC in banks domiciled in countries with a lower level of investor protection where managers have more freedom to manipulate fair value estimates.

A set of continuous and dummy country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) [LT] a country's legal tradition, common law versus code law, based on La Porta *et al*. (1997) and Ball *et al*. (2000); (2) the US economy versus the remaining countries, (3) [ASD] the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better

disclosure rules in the selected sample-countries; (5) [SOIP]: The average of the strength of shareholders protection in a given country from World Economic Forum over the period of (2008-2011).

The study also explores a variety of key bank characteristics that influence market valuation of the recognised expense of SOBC, and whether such an influence varies with country-specific institutional differences. The characteristics of banks include the size of banks, banks' potential growth rate of investment opportunities and the level of bank risk-taking measured by stock price volatility.

Lastly, this thesis covers the period from 2004 to 2011. To alleviate the possible bias in the reported findings due to the effect of the 2008 financial crisis, the impact of the mandatory adoption of IFRS2/FAS123R on banks' selected measures is reported on a yearly basis. Furthermore, the change in the magnitude of the recognised expense of SOBC is also compared with and without the crisis period. The main adopted value relevance models are also run including and excluding the 2008 financial crisis period.

1.5 US and the EU Banking sectors

Firstly, there are many reasons for choosing the US and EU markets for the purpose of this thesis. As stated earlier in this chapter, the use of SOBC in the US has been widely spread and accepted as an instrument to compensate employees at all levels of employment since the early 1990s (Murphy, 1999). At the European level, the use of SOBC, however, has arrived on the scene slightly later (Pendleton *et al*., 2002; European Commission, 2003). Pendleton *et al.* (2002) point out that a rapid growth by the early 2000s in using SOBC has been observed in the majority of the European Member States, particularly the 15 EU countries. Another report on SOBC schemes compiled by the European Commission in 2003 found that the use of SOBC has also become more

widespread towards the beginning of the last decade, particularly across the 15 EU countries. Such a wider-scale use of SOBC has been, mainly, promoted as a result of several initiatives and financial reforms in order to foster entrepreneurship in the EU market as a competitive and dynamic knowledge-based market in the world[14]. Furthermore, the European Commission is currently launching its own impact study on IFRS while many in Europe have started questioning the future of IFRS after ten years of adoption. Such that, it is a considerable opportunity to participate in the debate by covering the EU and US sample. Additionally, the EU and US contexts provide the researcher with a sound setting to explore how the economic effects of expensing the fair value of SOBC vary with country-specific factors along with benching two internationally active and peer markets that first adopted IFRS2/FAS123R.

Secondly, the banking sectors in the US and EU markets are chosen for the purpose of this thesis for many reasons. Chen at al., (2006: 943) reported evidence suggesting that the use of SOBC has become more widespread in the banking sector compared to that in the industrial sector[15]. They also reported that the percentage of SOBC relative to total compensation has also recently increased in banking industries. As such, SOBC explosion in the banking sector has been the central and most controversial issue on the level of SOBC offered to top executives and employees. The more complex activities of banking sector, has been suggested by Pendleton *et al.* (2002) as one of the main reason for the more frequent use of SOBC in compensation packages of banks.

More importantly, the use of SOBC inclines to induce excessive risk-taking in the banking sector (Chen *et al*., 2006; Walker 2009). This association between excessive risk-taking

[14] For more details, see the European Commission, 2003. http://ec.europa.eu/enterprise/policies/sme/business-environment/employee-stock-options/index_en.htm#h2-1

[15] Chen et al (2006) found that options as a percentage of total compensation in the banking sector experienced a 115% increase (from 1993 to 1998) as compared to a 14.71% increase in the industrial sector.

and the widespread use of SOBC in banks makes banks very susceptible to systemic crises. Indeed, this association has been a central focus of the accounting and banking literature (John et al., 2000; Chen at al., 2006; Walker, 2009). Walker (2009), for example, who later reviewed corporate governance in UK banks, pointed out that their culture of granting share-based incentives is viewed as excessive and it significantly induces risk taking.

Furthermore, Mehran and Rosenberg (2009: 5) also suggest that "the significant secular growth in option grants over these two decades" as one of the main reasons for the recent capital regulation in banking industry. In the US, for example, the Congressional Emergency Economic Stabilization Act was established in 2008 to limit financial institutions tendency to offer share-based incentives in order to reduce the probability of "unnecessary and excessive risks that threaten their equity values. This act, however, provides no clear and comprehensive definition of what would entail "unnecessary and excessive risk". Story and Dash (2009) also documented that banks quickly repaid the received funds to overcome the Act's restrictions[16], in particular before the 2009 year-end bonuses were determined. That is, the Act fell short of gaining its full advantage where banks withdrew from participating under the Act's restrictions. All the above mentioned reasons highlight the significance of the use of SOBC in banks. Focusing on the banking sector for the purpose of this thesis also responds to the lack of, and the need for additional studies on SOBC in the banking sector highlighted by earlier studies, such as Mehran and Rosenberg (2009).

Additionally, the banking industry has its unique characteristics that differ from those of other business sectors in terms of regulatory restrictions and their commensurate duties

[16] This provision applies only to "financial institutions participating in the Act's Troubled Assets Relief Program ('TARP') if (i) the institution has sold assets under TARP in sales that are not solely direct purchases, and (ii) the amount sold (including direct purchases) exceeds $300 million in aggregate".

and responsibilities to depositors and investors. The EU banks, for example are subject to rules set by regulatory bodies, such as the European Banking Committee and the European Banking Authority operated by the European Commission, and professional bodies, such as the European Banks Federation among others. These rules and regulations are generally attempting to promote the single market particularly in the banking sector. It also promotes a free and fair competition among banks in the EU and world markets. Finally, this homogeneity implies that a stronger set of controls can be used in this study compared with those used in earlier studies that only controlled for industry sectors (e.g. Aboody at el., 2004a; Chalmers and Godfrey, 2005; Shiwakoti and Rutherford, 2010; Dhar and De, 2011; Niu and Xu, 2009), or alternatively pooled them together (e.g. Rees and Stott, 2001).

1.6 Research Contributions

The first research question of this thesis is directly related to the literature that addressed the negative impact of expensing SOBC on companies' key financial indicators. A key contribution of this study is to identify, analyse, compare, and evaluate the total effect of expensing SOBC utilising pre and post adoption data as well as over an extended time-span (2004-2011), and using a single industry approach over an international sample of US and EU banks.

First, using pre and post adoption data along with covering a longer time-span extends the applicability of the existing literature and allows addressing factors that were suggested to influence the reported findings of this literature, such as option life cycle (Buston and Plumle, 2001; Chalmers and Godfrey, 2005; Shiwakoti and Rutherford, 2010), management discretion (Dhar and De, 2011) and the extent of curtailing SOBC programs (Ratliff, 2005). It also helps to diminish the random noise in the reported

estimations of earlier studies for the total effect of expensing SOBC over the option life cycle given the shorter life span in much of these studies.

More importantly, the findings of this study also extend the general applicability of the earlier single-country studies of Botosan and Plumlee (2001); Chalmers and Godfrey, (2005); Schroeder and Schauer (2008) and Shiwakoti and Rutherford (2010). Although Street and Cereola (2004) discussed and estimated an initial international generalisation utilising non-domestic companies listed in the US, but domiciled in other countries[17], this study adds wider external validity for assessing the impact of expensing SOBC rather than the more constrained Street and Cereola (2004)'s one year pre-adoption international study.

Another key contribution of this study is that it brings attention to the structure of SOBC expense in banking sectors. It highlights the recently gradual movement toward using cash-settled based compensation, preferably by bank management, due to some advantages from its accounting treatment. One of the possible reasons for this gradual movement is the flexibility given to a company to re-estimate the fair value of cash-settled based compensations at the end of each reporting period and at the settlement date compared to the restriction of the grant date estimation for equity-settled share-based compensations.

This thesis also briefly examines the validity of the proposition that companies will gradually reduce the effect of accounting requirement of IFRS2/123R through granting less SOBC awards to their employees and using different compensation structures. It also examines the magnitude in the change of SOBC expenses over the studied period.

[17] These countries were: Australia, Canada, France, Germany, Ireland, Japan, and the U.K.

Finally, the study examines the effect on wider range of performance measures to effectively capture the overall magnitude of the changes of financial ratios. All performance measures utilised in earlier studies [namely (Diluted EPS, Return on Assets (ROA) and Return on Equity (ROE) in addition to a widely used performance measure in banking industry [Cost-to-income ratio (CIR)], have been employed in this study. The well-established CIR have been used recently by academics and practitioners alike as a core measure to assess banks' cost efficiency (See Hess and Francis, 2004, Beccalli *et al*., 2006). According to a survey conducted by the ABA Banking Journal[18], publicly traded banks and equity analysts consider this ratio as an important benchmark of cost efficiency (Cocheo, 2000). Given the intuitive appeal of CIR as a proxy for cost efficiency, it is also relevant to examine the effect of IFRS2/FAS123R adoption on this ratio.

The second inquiry of the thesis is examined under the framework of equity valuation theory, and it is directly related to studies that investigate the relevance and the reliability of the disclosure versus the recognition approach of expensing the fair value amount of SOBC to market participants. From a standard-setting perspective and based on prevalent implicit assumption in empirical accounting research, recognition and disclosure are viewed as alternative accounting treatments (Kothari, 2001). Whether recognition versus disclosure of expensing SOBC affect users' decisions has been an issue of considerable interest to standard setters, practicing professionals, and academic researchers.

Studies which examined this issue in the context of the IFRS2/FAS123R adoption can be separated into two lines. The first line of studies investigated the value relevance and the reliability of the disclosure or/and the recognition approach for expensing SOBC for

[18] The ABA banking journal is an industrial journal published by the American Bankers Association, which is the voice of America's $14 trillion banking industry, representing banks of all sizes and charters, from the smallest community bank to the largest bank holding companies. http://www.aba.com/Pages/default.aspx.

periods prior to the mandatory adoption date of IFRS2/FAS123R, and using a sample of early adopter firms (Dechow *et al*., 1996, Rees and Stott, 2001; Bell *et al*., 2002; Aboody *et al*., 2004a, Balsam *et al*., 2006). These studies provide mixed results. Rees and Stott (2001, p. 115), however, highlighted the limitations of using pre-adoption footnote disclosure along with short-term data which eventually necessitate the need for additional research:

> "To determine if the positive relationship between ESO expense and firm value… is consistent over multiple periods. If this relationship does hold in subsequent periods, then the power of the results would be strengthened"

Consistently, Aboody *et al*. (2004a: 274) added that "inference related to the perceived reliability of disclosed but unrecognised SFAS123 expense may not be generalisable to an expense recognition regime"

The second line of studies, which are more relevant to this thesis, examines the relevance and the reliability of information revealed under the disclosure approach to expensing SOBC, in contrast to that revealed under the recognition approach consequent to the mandatory adoption of IFRS2/FAS123R (e.g. Niu & Xu, 2009). This line of research provides some evidence supporting the view that the disclosure approach of expensing SOBC is not enough to substitute that under the recognition approach.

However, both lines of studies examined this question using single country setting, particularly the US as SOBC schemes are heavily used by US companies (see Dechow *et al*., 1996, Rees and Stott, 2001; Bell *et al*., 2002; Aboody *et al*., 2004a, Balsam *et al*., 2006). Although this approach gives an initial general indication on how investors perceive the information revealed under the disclosure and the recognition approach to expensing SOBC, it does not take explicitly into account the industry and country-specific characteristics that may have affected these findings. More importantly, the

findings of the US focus research may not be similar to those in the case of other jurisdictions, such as the European market. The US market is regarded as highly efficient. In contrast, most of European markets might be considered less efficient (an exception can be the UK market which is an equity-based market). Healy and Palepu (2001) highlight the need for future research on standard setting, particularly to examine the effectiveness of IFRSs across different settings that adopted these set of standards. The second inquiry of this thesis assesses the extent to which the recognition approach to expensing the fair value of SOBC under IFRS2/FAS123R provides more value relevant information that better reflects the intangible value of such rewards than the disclosure approach, in an international sample of EU and US banks. The analysis is provided using three different research designs, i.e., Pre IFRS2/FAS123R analysis, pre- versus post-IFRS2/FAS123R analysis and post- IFRS2/FAS123R analysis. This thesis distinguishes mainly between pre and post adoption period and between US and non-US studies to highlight the gap that US and pre-adoption studies dominates the existing literature, whilst non-US and post adoption studies, and in particular studies on the effect of IFRS2/FAS123R on an international scale are not common.

Finally, the value relevance and the information content of recognised expense of SOBC could be contingent on some firms' characteristics. For example, firm size and firm growth potential were found to influence investors' reaction to the mandatory recognised expense of SOBC (Subramaniam and Tsay 2012) or investors' valuation of the disclosed or/and the recognised expense of SOBC (Rees and Stott, 2001; Aboody *et al*., 2004a; Niu and Xu, 2009). It would be useful, therefore, to explore whether the effect of these characteristics on market valuation of expensing SOBC holds across various institutional contexts that adopted the standard. The focus on the risk-taking factor that is unique to SOBC in the banking industry (Chen *et al*., 2006, Walker, 2009) also extends and

develops earlier literature on market valuation to the mandatorily recognised expense of SOBC. It extends the limited set of boundary conditions that influences market valuation to the mandatory expensing of SOBC.

Findings of this study extend the extant related literature on the direction, the magnitude, and the significance of the relationship between the disclosed versus the recognised expense of SOBC and firm value across different institutional settings. Findings of this thesis, overall, provide further international insights and input to standard setting regulators and other interested parties in comparative issues of international financial reporting quality of IFRS2/FAS123R in general and in the measurement issue of SOBC on an international scale in particular.

1.7 Research findings: A summary

The findings of the first research inquiry show that the compulsory adoption of IFRS2/FAS123R has through time resulted in prevalent possibility of modest but unnecessarily immaterial changes in selected key financial performance measures of banks. This modest and negative reduction in the selected financial performance measures is statistically significant in both US and EU banks' with the impact being more likely to be higher in the US banking sector as nearly twice as that in the EU banks. The reported modest impact does not reflect earlier research estimations indicating that concerns and criticism of the implementation of IFRS2/FS123R are largely unsubstantiated. The findings also show a recent gradual movement toward using cash-settled based compensation and a slightly reduction in the full impact of expensing SOBC grants which came to light after the first option cycle in the post-IFRS2/FAS123R adoption period was over.

The findings of the second research inquiry indicate that the recognition regime to expense SOBC is significantly more value relevant and better reflects the intangible value attributable to such rewards, relative to the disclosure regime. The influence of the differences in the financial reporting contexts on the value relevance and the intangible value attributable to SOBC is less burdensome after the mandatory adoption of IFRS2/FAS123R.

1.8 Structure of the thesis

The remainder of this thesis is subsequently structured as follows:

Chapter 2 explores the institutional background of issuing SOBC. It explains the role of SOBC in mitigating the agency gap that arises from the principal-agent conflict, particularly by functioning on aligning the interests of managers and employees with those of shareholders. It also highlights the financial reporting requirements and classifications related to SOBC prior and after the mandatory adoption of IFRS2/FAS123R. The chapter finally highlights and discusses the history and the nature of the controversial debate on the financial reporting implications to the disclosure versus the recognition approach to account for SOBC, and how this debate remains a subject of widespread discussion internationally.

Chapter 3 critically reviews the extant related studies to this thesis. The first section of this chapter reviews the existing literature that used pre and post IFRS2/FAS123R adoption data to estimate the negative impact of the mandatory expensing of SOBC on companies' key financial indicators. The analysis in this section also distinguishes further between US and non-US studies in order to reflect the dominance of US and pre IFRS2/FSS123R adoption studies. The analysis also stress that studies on the impact of the mandatory adoption of IFRS2/FAS123R on a wider international scale are not

common, given that this impact is more likely to vary according to the institutional and the reporting environment of the setting that adopted IFRS2 and FAS123R. The second section of this chapter reviews the existing literature that examined the information content and the value relevance of expensing SOBC under the disclosure approach against that under the recognition approach. The analysis also highlights that given the mandatory adoption of two highly converged standards IFRS2 and FAS123R, this stream of literature generally assumes that the value relevance of disclosed versus recognised information is the same across firms, and that recognition of previously disclosed accounting items affects all countries homogenously. However, the extent to which users of financial reports understand the disclosed versus recognised expense of SOBC may differ across different institutional contexts. Finally, this section further develops the related research's theoretical framework and hypotheses used to operationalize the standard setters' qualitative characteristics of the relevance and reliability of the disclosure versus recognition approach on an international basis, and taking into account reporting differences between various institutional settings.

Chapter 4 develops a relevant methodological framework that underpins the research inquiries of this thesis. The first section of this chapter briefly discusses the research paradigm and its main components. The second section of this chapter demonstrates the relevance of the selected research paradigm and the methodological choices on which the research design will be built. The third section discusses the research design, methods, and samples selected to answer each of the research questions of the current thesis. Finally, the chapter provides a self-reflection on the selected methodological choices for this thesis to address its few potential limitations and how they are addressed.

Chapter 5 presents the descriptive statistics, the empirical results and the analysis of the negative impact of the mandatory adoption of IFRS2/FAS123R on selected performance

measures within and between two distinct settings: the US and EU banking sectors over the period 2004-2011.

Chapter 6 presents the empirical results and the analysis of the value relevance and information content of expensing the fair value of SOBC under the disclosure approach versus that under the recognition effect. It also presents and discusses the results of the extent to which this finding varies across banks that operate in countries that have different levels of investor protection.

Chapter 7 summarises, draws conclusions and inferences, identifies limitations from the thesis' findings, and suggests areas to be developed further and addressed in future research.

Chapter 2: Institutional background

2.1 Introduction

This chapter presents a brief description about the agency problem that arises from the separation of ownership and control of business and the consequent principal-agent conflict where the former delegates the decision-making authority to the latter. It also highlights the relationship between the agency problem and SOBC which is mainly identified as an effective tool for aligning the interests of the parties involved. The background that explains the current financial reporting requirements and classifications of SOBC is also briefly explained in this chapter. Finally, the chapter traces the history of and the nature of the debate about the financial reporting implications of the disclosure versus the recognition approach to account for SOBC, and shows how this debate remains a subject of widespread discussion internationally.

2.2 Agency theory

Agency theory has been widely used in accounting literature and other related fields of interest, such as corporate finance and governance. It is concerned with the 'ubiquitous agency relationship' (Eisenhardt, 1989, p.58) which arises "between two (or more) parties when one, designated as the agent, acts for, on behalf of, or as representative for the other, designated the principal, in a particular domain of decision problems" (Ross, 1973, p. 134). Prominent examples of the agency relationships are illustrated between the owners of a company and its manager(s) (Jensen and Meckling, 1976), and the one between shareholder and bondholder (Myers, 1977). This chapter will focus on the former example of the agency relationship and its relationship with SOBC.

The phenomenon of widely spread separation of ownership and control has resulted in emergence of two new groups created out of the former single group: "…the owners [group] without appreciable control, and the control [group] without appreciable ownership" (Berle and Means, 1932, p.121). The increasing dispersion of shareholding away from the founders of the business (principals) accelerated the growth of hiring professional managers (agents) at senior levels of management of large companies. Those professional managers are usually delegated the task and the authority of operating the company, where the number of shareholders are usually too dispersed, and they lack the required skills and experience to coordinate this task. However, the separation of ownership and control is more likely to result in conflicts as the two groups are usually self-interest utility maximizers and more likely to have different interests (Jensen and Meckling, 1976).

However, in imperfect labour and capital markets, agents usually operate to maximize their own self-interest, particularly if they have no personal stake in the shares of the company and at the expense of the company's shareholders. Agents, in this case, are only motivated by pecuniary gains derived from their employment, such as salaries and post-retirement benefits and by non-pecuniary gains such as leisure and perquisites. As such, agents' behavior and interests becomes consequently opposed to those of the principals who seek to maximise their own wealth and value.

Adam Smith, the classical 18th century economist, argued that agents will not devote significant effort to creative activities and to maximize the principals' wealth as they would do for their own (cited in Jensen and Meckling, 1976). Holmström (1979) adds that devoting significant effort by agents will negatively impact their utility as it may require too much effort to learn about and to produce or to invent creative and new activities. Yet under the lack of incentives, agents tend to exert a minimum amount of

effort. Simultaneously, agents are usually not as diversified in their income generation as principals and seem to behave in a risk-neutral way to the detriment of shareholders (Jensen and Meckling, 1976; Eisenhardt, 1989).

However, the principal's utility will be maximised if an agent is willing to devote the best possible significant effort that consequently increases the corporate profit and the principal's wealth. Lambert (2001) argues that agents influence this relationship in two ways; through their pecuniary and non-pecuniary gains which negatively influence the corporate profit and consequently the principal wealth, and through their exerted effort and actions which eventually influence the distribution function of the profits. Harris and Raviv (1979) point out that the dispersion of shareholding of businesses also make it infeasible to observe and monitor agents' actions constantly, which eventually results in a situation of moral hazard. Shareholders, yet can only observe and monitor the outcomes of agents' actions and effort through corporate profits and share value. Both indicators, nonetheless, are to some extent considered as random variables and more likely to be affected by various factors besides the manager's effort and actions (Holmström, 1979). Lambert (2001) maintains that principals cannot always draw a clear conclusion about the efficiency of the actions and the efforts that have been taken by agents.

Agency theory attempts to resolve these problems that arise from the agency relationship, in particular when a conflict exists between the agent and the principal interests and it is difficult for the principal to constantly monitor the agent' actions and effort. It also seeks to resolve the risk-sharing problem, which is also rooted in the agency relationship, where the principal and the agent usually have different risk preference which may results in different actions taken by agents compared to those preferred by the principal. Agency theory uses the metaphor of a contract to describe the relationships between the principle and the agent. It focuses on designing the most efficient contract that governs the

relationship between the principal and the agent given the assumptions of self-interest behavior, information asymmetry and risk-aversion.

Designing a contract that induces risk-sharing and motivates higher effort by the manager will increase the likelihood of positive outcomes and will also increase the likelihood of shifting aside of the random variables preferred by the principal (Rees, 1985). Sappington (1991) argues that a simple fixed pay contract would not be effective as that of outcome-based contract as the former offers the agent a de facto insurance against bad outcomes that might be a result of non-exerting the required effort by agents to avoid them. Agency theory, therefore, attempts to design a contract that induces higher effort and proper actions by the agent and simultaneously share the risk inherent in the random variable "company value" adequately with the principle. This is also the goal of the commonly observed phenomenon of issuing SOBC which will be described in the following section.

2.3 The role of SOBC in mitigating the principle-agent conflict

The first best contract proposed by agency theory to address the principal-agent conflict is usually defined as choosing "the contract and the actions to maximize the principal's expected utility subject to meeting the agent's acceptable level of utility" (Lambert, 2001, p. 12). If incentives are not part of such a contract assuming that both involved parties will work together cooperatively and the agent will exert the best effort without being influenced by the self-interest behavior or the risk-aversion attitude, then mitigating the principal-agent conflict might be more likely (Jensen and Meckling, 1976; Eisenhardt, 1989; Lambert, 2001). However, if this assumption is relaxed, it will be less likely to mitigate this conflict. Effective incentive mechanisms consequently need to be constructed for the purpose of increasing the likelihood of mitigating this conflict, while the roles of the agent are to make decisions on the principal's behalf and to also bear risk.

Conlon and Parks (1990) maintain that the ability of a principal to monitor an agent's contributions to the former wealth would affect the negotiated contract where both the principal and the agent would also consider information costs and risks. Agents, under the risk-aversion assumption would always prefer the non-contingent forms of compensations and such a preference is more likely to be acquiesced by the principals if the latter can observe or monitor the efforts of agents at little or no cost. If monitoring, however, is not possible, principals will prefer performance-contingent forms of incentive to design the contract (*Ibid.*).

Holmström (1979, p.74) argues that a complete monitoring of agents' actions may be achieved only in simple situations, in which case a first-best contract to address the principal-agent conflict can be tackled by employing a forcing contract that penalizes dysfunctional behavior. This is, however, often not the case where behaviour and actions taken by the agent are not always fully observable or prohibitively costly, and hence cannot be effectively contracted upon. Therefore, most contracts will be designed as performance-contingent forms under sub-optimal contracts to address this conflict given the information available to the principal and the agent. Bebchuk *et al*. (2002) maintain that such a contract is found to be an optimal when it minimizes all agency costs[1].

The failure of fully observing the agents' actions will shift the interest toward the use of imperfect estimators of actions in contracting. Holmström (1979) points out that those imperfect estimators are extensively used in practice to alleviate moral hazard problem, yet they do not allow for a completely unambiguous track of the actions taken by the agent. One important example of these imperfect performance measures is the set of traditional accounting-based indicators, such as annual profit, earnings per share [EPS],

[1] Agency costs as defined by Jensen and Meckling (1976) are the total of the bonding and monitoring costs as well as the residual loss incurred by the principal whenever the agent's actions do not maximize the principal's wealth.

return on assets [ROA], or return on equity [ROE]. However, there is an issue with such a set of measures given its purpose to deliver the most useful information about the managers' actions to the shareholder (Lambert, 2001). Accounting performance measures are derived from accounting figures that are subject to agents' discretions where different methods of allocating costs and revenues might be followed. Thus, they may not accurately reflect the accurate present value of a corporation and this ultimately affects their ability to convey useful information about the agent' actions to the principal. Another example of an alternative set of imperfect indicators are the market-based financial indicators, such as the share price or the total shareholder's return (TSR), where the performance of a corporation is measured by its stock price along with any paid dividends. This set of market-based measures is easily observable and not subject to accounting influences (Rappaport, 1998). Yet they might not be fully controlled by the agent or at least not always influenced by its actions, such as the influence of economic recessions on share prices. Ittner *et al*. (1997) and Lambert (2001) also point out the emergence of nonfinancial measures as another complementary set of performance indicators that assist in evaluating agents' actions by placing greater emphasis on non-financial aspects, such as product quality, customer satisfaction and the attainment of strategic objectives. This set is usually used along with accounting-based and market-based performance measures to compensate the latter mainly dependence on the business' financial aspects (See Ittner *et al*., 1997; Kaplan and Norton, 1992, 1993).

A fundamental idea is that principles and agents will agree on a contract which specifies a performance evaluation system and using a metric of these imperfect estimators that are supposed to signal information about agents' actions and upon which the agent's compensation will be based. Such a contract is mainly designed to optimally maximize both an agent's and a principal's utilities which are derived from the income both parties

can spend on consumption. This contract trades off the benefits of the additional risk-sharing imposed on the agent in order to motivate him, for the cost of doing so (i.e., the higher expected provision of incentive pay). That is, this contract is believed to closely align the agent's interest with that of the principal, given the problem of the risk-aversion and information asymmetry. Justified by these goals, SOBC, particularly employee share options as the most common component of these packages, have expanded significantly since the early 1990s in the US (Lambert, 2001; Espahbodi *et al*., 2002; Core *et al*., 2002; Street and Cereola, 2004; Mehran and Rosenberg, 2009), and since the late 1990s for much of Europe, particularly the 15 EU countries (See Pendleton *et al.*, 2002; European Commission, 2003). The main specifications of SOBC contracts frequently used in practice and accounted for under the IFRS2/FAS123R are briefly discussed next.

2.3.1 Stock grants

Stock grants are company shares awarded to its employees and very often are common stocks. This type of SOBC is usually contingent upon achieving vesting conditions that can either be time-based or performance-based or mixed. In all cases, and when the vesting conditions are satisfied, stock grants directly transfers ownership from principals to agents and consequently further align the interest of the two groups. Many studies have reported favourable findings to the notion that employee ownership results in higher organizational identification and commitment, along with enhanced productivity and firm performance (see Kruse, 2002; Kruse and Blasi, 1997).

2.3.1.1 Time-based vesting stocks

Time-vested stock-based compensations use time-based restrictions on shares awarded to the agent in order to retain him/her with the issuance firm over a specified period, usually three to five years before they are allowed to sell their shares. The main purpose of using the time-based restrictions is to ensure that the agent will focus on long-term

rather than artificial short-term performance improvements. This type of equity-based compensations is commonly referred to as restricted time-vested or non-vested shares. In some cases, agents receive the market value of the granted restricted shares at the end of the time-vesting period in cash rather than receiving actual shares. This is usually referred to as restricted stock units or phantom shares and mainly used to eliminate the ownership transfer through actual shares.

2.2.1.2 Performance-based vesting Stocks

Performance-based vesting stock grants are an equity-based and long-term incentive that can serve as complements or as substitutes for time-vested stock grants and where performance vesting criteria can either accelerate or trigger vesting of stock grants. Bettis *et al*. (2013) noticed that the use of performance shares has increased rapidly in recent years. A significant change has also been noticed in the design of performance-based vesting stocks since its emergence in the US during the 1970s and under what used to be called "all-or-nothing" vesting criterion (Bettis *et al*., 2010). Agents are usually promised to receive a certain number of shares at the beginning of the vesting period based on three goals set in the contract: *target goal, threshold goal and stretch goal.* The promised performance shares will vest when the set target goal is met. The threshold goal sets a lower boundary for the performance goal below which no shares will vest. By contrast, the stretch goal sets a cap that lies above the target goal and when it is met, agents will receive additional shares on top of the number of promised shares.

The type of performance measures used in designing the plan of performance-based vesting stocks varies among companies (Bettis *et al*., 2013). Holden and Kim (2013) noticed that the two most popular performance measures for performance share plans in S&P 500 firms between 2006 and 2012 are total shareholder returns (TSR) and earnings per share (EPS) respectively along with other performance measures. Bettis *et al*. (2013)

also found apparent movement toward the use of accounting-based performance measures, particularly reported earnings at the expense of market-based performance measures in setting the targets of performance-based vesting stocks.

Using the performance-based vesting provisions has also been found to have a positive association with managerial incentives. Larcker (1983) provided early evidence on the significant influence of using these instruments on managers' investment decisions which consequently results in increasing shareholder wealth represented by the capital market reactions to utilising those compensation instruments. Bettis *et al*. (2010) and Bettis *et al*. (2013) also documented a strong positive association between market and accounting-based performance measures and the use of performance-based vesting stocks plans. More importantly, Bettis *et al*. (2010) provide evidence that the use of performance-based vesting provisions specify meaningful performance hurdles and provide significant incentives for agents, countering the notion that they serve as only mere "window dressing". This argument is also maintained by the findings of De Angelis and Grinstein (2015) who found strong evidence supporting the notion that the use of performance-vested instruments do not constitute a deviation from optimal contracting, and only so when shareholder oversight is lacking.

2.3.2 Stock options

As discussed earlier in this chapter, equity participation is usually regarded as an integral part of a company's employee reward strategy and of which employee share options (ESOs) is the most common form (Core *et al*., 2002; Hall and Murphy, 2003, Frydman, and Jenter, 2010). Hall and Murphy (2003, p. 2) defines employee share options as "contracts that give the employee the right to buy a share of stock at a pre-specified "exercise" price for a pre-specified term" set at the date of grant. The primary reward arising from using share options in compensation contracts is that the possibility of the

principal's and the agent's gains, arises from upward movements in stock price. This feature is considered by the agency theory as providing the basis for a powerful incentives tool that align the interests of both the principal and agent where the latter seeks to take actions that will eventually maximise shareholder value (Jensen and Mecking, 1979).

Furthermore, share options are granted under certain restrictions compared to regular traded financial options. Employees are not allowed to trade their share options, and are not entitled to exercise their awarded options until a specified period of time, known as the vesting period, usually three to five years. Vesting of share options is also conditional upon an employee remains employed (Hull, 2012). That is, if holders of share options that are in the money[2] wish to leave the company, they are required to immediately exercise their outstanding options. If these options are out of the money or their vesting period has not passed yet, employees lose their rights to the options. Furthermore, share options plans are usually operated in a company for several years and typically a new tranche of share options will be granted on a yearly basis (Botasan and Plumlee, 2001).

Real and virtual share options are the two main forms of employee share options plans. A company will receive a cash inflow upon exercising real share options where employees need to pay the agreed upon exercise price in exchange for the underlying shares attached to their options. The company, however, has a cash outflow in the case of Virtual share options, also known as share appreciation rights (SAR) where instead of issuing actual shares to the employee, the intrinsic value (the difference between the current market value of the share and the exercise price) is paid.

Indeed, earlier studies have found that share options have been widely accepted as

[2] Stock options are considered in the money when the current stock price is higher than the exercise price. If the current stock price is lower or equal to the exercise price, stock options are considered out of the money or at the money respectively.

compensation mechanisms used by companies at many levels of employment as an incentive or motivator for future performance (Jensen and Meckling, 1976; Core and Guay, 2001). Other related studies have also found that companies grant SOBC generally and stock options in particular to attract and retain highly talented employees (Kedia and Mozumdar, 2002; Blasi *et al*., 1996). In addition, employees' efficiency can also be enhanced by actively engaging them in the decision-making process (Landau *et al.*, 2007). Cash outflow in term of cash compensation can also be replaced by the use of option grants; particularly for start-up firms and those that have liquidity constrains (Yermack, 1995; Core and Guay, 2001).

However, an equally important accounting issue is to evaluate not only the benefit of, but also, more importantly, the full extent of the cost of SOBC packages. This cost should be fairly reflected and captured by the accounting treatment of such rewards packages within the financial statements. The next sections summarise the accounting requirements of SOBC, and trace the history and the nature of regulatory development involved in mandating the recognition regime to account for SOBC under IFRS2/FAS123.

2.4 Accounting for SOBC

The accounting standards IFRS 2 and SFAS 123R now mandatorily require companies to recognise all forms of SOBC as an expense at their fair value which is determined at the grant date, and over the vesting period. The standards also require that the valuation itself be disclosed, along with several important input parameters and detailed descriptions about the payment plans (FASB, 2004, IASB, 2004).

The fair value of SOBC instruments is rarely obtained externally from the market where it is unusual to find similar or comparable traded instruments, given that those

instruments are not traded in the market. Therefore, companies must estimate the fair value of SOBC, particularly share options using an option pricing models. Both IFRS 2 and FAS 123R do not specify a particular option pricing model used to calculate the fair value, but they recommend using the Black-Scholes or the Binominal models[3] as acceptable methods companies can utilise to calculate the fair value of share options. IFRS2/FAS12R, though, requires companies to disclose the six input parameters used in the selected option pricing model in their financial reporting footnotes. Those inputs are: exercise price, current share price, expected volatility, expected life of the option, expected dividend yield and risk-free interest rate. The first two inputs are objectively determinable, whereas the rest of the inputs are subjective and based on assumptions that generally require significant analysis and judgement.

The general principle of the accounting treatment of SOBC is that companies debit their income statements with the incurred expense with the credit entry recognised either in equity or as a liability. The criteria for the credit entry depends on the classification of SOBC as equity-settled or cash-settled based compensation respectively. Equity-settled share-based compensation arises in transactions where a company receives services from its employees and as consideration for equity instruments of the company as in the case of the grant of shares or shares options to employee. Cash-settled share-based compensations, also known as liability awards, arise in transactions where a company receives services from its employees and incurs a liability to transfer cash based on the

[3] Although the IASB and the FASB do not prescribe a specific formula or model to be used for option valuation, most companies prefer to use the Black-Scholes model since it is the easiest to implement in a company, particularly if a company lacks data or resources for a more accurate valuation (Landsberg, 2004).). The Black-Scholes (B-S) model calculates a theoretical call price (ignoring dividends paid during the life of the option) using the five key determinants of an option's price: the current market price of the share that underlies stock option at grant date, the exercise price of the option, the expected volatility of the share price, time to expiration, and short-term (risk free) interest rate. Merton (1973) adjusted BS model for dividends expected to be paid on the shares. The binomial model provides discrete approximations to the continuous process underlying the Black-Scholes model. It mainly breaks down the time to expiration into potentially a very large number of time intervals, or steps, particularly to consider the possibility of early exercise as in the case of American option.

value of the company shares as consideration. An example of a liability award is the granting of share appreciation rights (SARs) to employees which entitle them to future cash payments based on the increase in the company's share price. The two classifications of SOBC have the same principle of using the fair value approach to estimate the incurred expense. Yet unlike the grant date model for equity-settled share-based compensations, a company re-estimates the fair value of cash-settled based compensations at the end of each reporting period and at the settlement date. Consequently, a company can frequently adjust the incurred expense and sometimes reverse the expense where the ultimate cost of cash-settled rewards is the amount of cash paid to its employees which is the fair value at the settlement date.

2.5 Evaluation of the history of the debate to the mandatory adoption of IFRS2/FAS123R

Mandating the expensing regime to SOBC under IFRS 2 and FAS 123R was the outcome of an increasing pressure and a long debate on the need for transparency over SOBC packages (Guay *et al.*, 2003; Hall and Murphy, 2003; Farber, *et al.*, 2007; Ferri and Sandino, 2009). It radically changed the accounting treatment for these reward packages by requiring all forms of SOBC, particularly employee share option schemes, to be recognised as an expense at their fair value which is determined at the grant date and over the vesting period (Hagopian, 2006). The use of SOBC has a longer history in the US than the EU. SOBC have expanded significantly since the early 1990s in the US (Lambert, 2001; Espahbodi *et al.*, 2002; Core *et al.*, 2002; Street and Cereola, 2004; Mehran and Rosenberg, 2009), and since the late 1990s for much of Europe, particularly the 15 EU countries (See Pendleton *et al.*, 2002; European Commission, 2003). Therefore, the issue of accounting treatment for SOBC was addressed earlier and more directly in the US compared to other settings. Nonetheless, such a controversial issue or

debate was especially, but not solely in the US. Apostolou and Crumbley (2005, p. 1) point out that the mandatory expensing of share options was "the most controversial topics in accounting during the last decade". The historical background of to this debate is presented in this section.

Prior to the introduction of FAS123R, share options were accounted for by the majority of US companies using the 'intrinsic value approach' of APB Opinion No. 25 which was issued in 1972 by the FASB's predecessor, the Accounting Principles Board. Under this approach, companies were not required to recognise any expense in their income statement, if the market value of the underlying shares was equal or above the exercise price of option grants on the grant date. Footnote disclosure for issuing option grants was the sole accounting requirement.

In 1993, the US-FASB released an exposure draft under which companies would be required to deduct the grant-date fair value of option awards from their income statements over the vesting period. The proposed draft proved controversial, eliciting the strongest continuous opposition over the history of FASB, particularly from the high-tech industry, the U.S. Congress, and major accounting firms (Farber, *et al*., 2007; Harter and Harikumar, 2002; Schwimmer, 2004). Farber, *et al*. (2007) pointed out that there was such strong political pressure opposing this draft that a robust congressional intervention was required to prevent the FASB from moving ahead with mandating the proposed standard because of its socio-economic implications. Some concerns, for example, were directed about the possibility that the attention focused on earnings determined by the expensing of share options might "have detrimental effects on competitiveness and innovation" (Ratliff, 2005, p. 38) as a result of the possible decreases in net income and its related financial indicators. Furthermore, only one month after issuing the Exposure Draft, 1,700 comment letters had been sent to the FASB, 1,000 of these letters were from

employees of companies more likely to be considerably affected by the passing of this draft. This concern reflected employees' fears that companies would discontinue share option programs if they were forced to include the value in net income (Ratliff, 2005, p.39).

The FASB, eventually, retreated from the original proposal and issued SFAS 123 (*Accounting for Share-Based Compensation)* in 1995 that encouraged but did not require recognition of compensation cost for the fair value of share options. Companies were allowed to choose between the *intrinsic-value* method prescribed by APB No.25 (Accounting Principles Board 1972) with pro forma disclosure or recognition under the fair value method. That is, companies might choose to use APB No. 25, but also they must disclose by way of footnote pro-forma net income, and basic and diluted earnings per share if the fair value method had been used for all option grants (SFAS123, para. 11). The other alternative was to use the fair value method for recognition purposes and once a firm chooses this method it is not allowed to reverse the decision (SFAS123, para. 14).

However, under this constraint, the majority of companies chose to adopt the first alternative (i.e. APB 25 with pro forma disclosure) because it was perceived that the cost of the recognition would be higher than the cost of the other available choices (Apostolou and Crumbley, 2001; 2005). Option grants, therefore, remained frequently issued 'at money' such that the share price at the grant date was equal to the exercise price, resulting in no expense being deducted from the reported earnings. That is, option grants were only disclosed in the footnotes, but not recognised in the income statement, and often resulted in ultimately overstated profit. Apostolou and Crumbley (2005, p. 34) claim that since the intrinsic approach was a common practice among the majority of companies, share options were considered 'stealth compensation deductible for tax purposes without

diluting reported financial earnings'. Exercising option grants often helped companies to avoid paying taxes. When these grants were exercised, US companies, for example, claimed a tax deduction equal to the difference between the exercise price and the underlying share price at the exercise date (Hall and Murphy, 2003; Babenko and Tserlukevic, 2009). Subsequently, reported earnings, under such an accounting and favourable tax treatment, were being distorted and often did not faithfully represent the underlying economic reality or a 'true and fair' view of companies' financial positions.

Following the Enron, WorldCom and other financial and accounting debacles, the controversial debate over option expensing continued to attract widespread criticism. The FASB (2004) started to reconsider the issue, and the debate resumed (see Mock, 2005; Ratliff, 2005), especially but not solely in the US. Sir David Tweedie (2002)[4], former chair of the IASB for example pointedly considered that 'Enron was brought down by share options. [T]he sheer greed of hidden numbers'. The controversial debate was centered on choosing between the disclosure and the recognition approaches to account for the cost of SOBC and on the subsequent impacts of the selected accounting treatment. Eventually, both the FASB and IASB acknowledged that disclosure is not an adequate substitute for recognition of compensation cost for the fair value of SOBC. Non-recognition of the cost associated with SOBC in the income statement obscures the information contained in reported earnings and undermine the transparency, reliability and value relevance of financial reports (FASB, 2004, IASB, 2004). Indeed. by late 2002, supported mainly by this argument and responding to the pressing need of the investment community for more transparent accounting for option grants, the IASB released an exposure draft ED2 (*Share-based Payments*). The draft was finalised on 19th February

[4] Speech by Sir David Tweddie, Sydney, Thursday, 15 August 2002. Available at http://www.frc.gov.au/speeches/tweedie_speech.asp.

2004 and first applied to accounting periods starting 1st January 2005. The standard requires companies to recognise the fair value of option awards at the grant date as an expense over the vesting period[5].

The introduction of IFRS2 presented an exogenous shock that radically changed accounting for equity based compensation, particularly by adopting the view that all SOBC transactions ultimately lead to expense recognition. By December 2004, the FASB also released the final standard SFAS 123R (*Share-based payments*) requiring firms to recognise the grant-date fair value of share-based payments as an expense over the vesting period. The standard was first applied to accounting periods ending in 2006.

Nearly a decade has passed since the mandatory implementation of IFRS2/FAS123R that have mainly adopted the recognition over the disclosure approach to account for SOBC. Yet the financial reporting implications surrounding the recognition versus the disclosure approach to the cost associated with SOBC in financial statements remains a subject of widespread discussion internationally. The next section addresses this controversial issue in more detail.

2.6 Disclosure versus recognition approach of SOBC and equity valuation theory:

One of the primary focuses of equity valuation theory is to estimate the value of company's shares. The finance literature has introduced many models that attempt to estimate asset's or security's value. The Capital Asset Pricing Model (CAPM) is one of the most common used models[6]. This model values an asset based on its expected cash flows and the expected rate of return the market requires for the risk of those cash flows. Market based accounting studies have also been influenced by the development of equity

[5] The standard required companies to prepare comparator figures for the earlier year. Further, all option grants awarded after November 2002 with first vesting after 1st January 2005 were required to be included in the charge to profits.
[6] The market value of a firm under the CAPM can be written as the discounted present value of future flows of the firm. (for derivation see Brealey and Myers, 1984)

valuation models in the existing finance literature, in particular the CAPM. This stream of accounting studies tests the ability of accounting information to convey useful information for the purpose of equity valuation[7] given that the financial reporting is one of the main available sources of information about the firm.

Based on the CAPM, market based accounting literature views the market value of a firm as a function of the firm's expected future cash flows and the associated risk. Accounting earnings are usually viewed by accounting researcher as a surrogate for cash flows. To investigate whether accounting information is useful for decision making, researchers use different common and competing assumptions underlying the relationship between each of accounting information and the change in accounting procedures and firm's equity valuation. An example of such hypotheses is the Efficient Market Hypothesis [EMH]. By utilising the CAPM along with the assumption of perfect financial market under which the cost of transactions, contracting and information is zero, the EMH predicts that stock price changes are not associated with certain voluntary changes in accounting procedures. By contrast to the EMH, the "mechanistic" is a competing hypothesis that posits a mechanical relationship between accounting earnings and stock price. Watt and Zimmerman (1986) point out that market based accounting studies that adopt the mechanistic hypothesis stress that the market is systematically misled by accounting procedures particularly those procedures whose effect on earnings is publicly known.

Furthermore, while accounting standards require certain information to be recognised in the body of financial statements using double entry accounting, they require other information to be only disclosed. Recognition of an item on the face of financial statements includes 'depiction of this item in both words and numbers, with the amount

[7] As earnings could be used as a surrogate for cash flows, accounting information would provide information on both the expected cash flow and the expected rate of return where the latter depends on the risk of the asset which is likely to be empirically associated with accounting number (See Watts and Zimmerman (1986, 27)

included in the totals of financial statements' (SFAC No.5 FASB, 1984: para.6). Disclosure of an item includes information depiction about this item and usually within the annual report, with the amount not recognised in the financial statements. Indeed, income statement recognition versus footnote disclosure has been a fundamental issue in accounting literature (e.g. Bernard and Schipper 1994; Barth *et al*., 2003; Davis-Friday *et al*., 2004; Libby *et al*., 2006). Theoretically, and based on the EMH, there is a generally accepted belief that the accounting treatment of SOBC (i.e., recognition versus disclosure) would not matter as long as market participants value substance over the form (Kothari, 2001, Ahmed et al, 2006). That is, unless the changes in accounting treatment do not present significant information in calculating value, they should not affect firm value. This is because changing the information location in the financial reports does not have any impact on the fundamental cash flow underlying the firm's value. Yet if there are costs of processing information (Barth *et al*., 2003), systematic bias in how investors process information, such as limited attention (Hirshleifer and Teoh, 2003) or differences in the perceived reliability of recognised versus disclosed items (Bernard and Schipper 1994; Ahmed *et al.*, 2006), this choice can matter to users.

Opponents of mandating IFRS2/FAS123R believed that it would not significantly influence how market participants perceive the cost associated with SOBC grants versus their incentive effect as tools to attract talented employees and drive future performance (see e.g., Ratliff, 2005; Bodie *et al*., 2003; Sahlman, 2002; Doerr and Smith, 2002; Derieux, 1994 and Rouse and Barton, 1993). Firms were already disclosing the dilutive effect of share option grants on earnings within the footnotes of the financial reports using the pro-forma disclosure (i.e. if the fair value had been in used). Therefore, mandating IFRS2/FAS123R would not release any fundamentally new information in calculating value. It may only reveal greater transparency by shifting the disclosed information

concerning options grants from the footnotes to recognition in the financial statements. Sahlman, (2002, p92) went further and claimed that 'expensing options may lead to an even more distorted picture of a company's economic condition and cash flows than financial statements currently paint'. He added that investors and analysts who wish to adjust income figures according to the cost of options can find all the necessary information in the footnotes and that the importance of the useful information disclosed in the footnotes might be lost if share option grants were expensed.

These claims against the mandatory adoption of IFRS2/FAS123R were mainly built and based upon EMH to emphasis that there should be no cash flow implications, and therefore no difference in the information content of recognised versus disclosed expense. As such, shifting the disclosed amount from the footnote and recognising it as an expense in the financial statements should not influence how market participants perceive these compensation grants and the extent to which they assess their incentive effect versus their dilutive associated cost.

However, some market participants appear to hold beliefs contrary to the prediction of the EMH. Based on the many comments in letters to the FASB during the discussion period prior to the issuance of SFAS 123, Dechow *et al*. (1996) suggest that there may be differences in the pricing effect between the disclosure and recognition approach to expensing the fair value of SOBC. On the one hand, investors' perceptions of future cash flows might be revised as a result of earnings reduction under the recognition of share option expense in the income statement. This in turn might cause stock prices to fall. On the other hand, SOBC aims to drive companies' future performance over the long-term and it is associated with extra market risk factor. Market participants are expected to compensate the risk factor associated with SOBC expense in comparison to other operating expenses such as salaries or bonuses which are paid based on the past services

or performance. Unlike if it is disclosed in the footnote, the recognised expense of SOBC would also be under further scrutiny of external auditors. As such, investor' perception to future cash flow might be revised upward where SOBC expense is viewed as an intangible asset that contributes to better future firm's value.

The controversial debate over the recognition versus the disclosure approach has emphasised the ability of the selected accounting treatment to provide more value relevant and reliable information for investor valuations (See for example Davis-Friday *et al*., 1999; Cotter and Zimmer 2003; Ahmed *et al*., 2006). More importantly, the mandatory expensing of SOBC has been adopted by two major accounting standard-setters (i.e. IASB and FASB). The convergence process of IFRS2 and FAS123R aims to mitigate the international differences in measuring the cost associated with the SOBC grants, and thus to deliver more reliable and useful information to market participants across all the settings that adopted these standards. The differences in the institutional contexts are expected to affect market participants' decisions to assign the appropriate weights to the incentive derived from SOBC grants. For example, a lower level of investor protection might imply a higher probability for management discretion tendency to use SOBC opportunistically as a way to pay reward managers and employees agent their part of the profit.

That is, the debate over the recognition versus the disclosure approach to account for SOBC remains a subject of widespread discussion internationally. Evidence on how investors on an international basis perceive the information revealed under the disclosure versus the recognition approach to expensing the fair value of SOBC is needed. The effect of country-specific characteristics on this relationship may imply that the findings in a specific context such as the US is not generalisable to other jurisdictions, such as the European market which is usually classified as debt-based markets (an exception can be

the UK and the Irish market which are equity-based markets). Based on a score of five institutional characteristics[8], Lee *et al*. (2010) provide evidence that equity-based markets, such as the US, UK and Ireland have higher financial reporting incentives than those of other EU countries, such as Portugal and Greece which are usually classified as debt-based markets. Thus, the impact of, and the benefit from the adoption of IFRS2/FAS12R are expected to be more apparent in high efficient equity-based markets such the US.

Healy and Palepu (2001) highlight the need for future research on standard setting, particularly to examine the effectiveness of IFRSs across different settings that adopted these set of standards. This thesis provides the opportunity to examine the extent to which the mandatory expensing of SOBC provides more value relevant information that better reflects the intangible value of such long-term rewards across wider international settings that have their own unique institutional environment but have adopted the international standards IFRS2/FAS123R.

2.7 Summary

The aim of this chapter is to present a brief description about the agency problem that underlies the principal-agent conflict arising from the separation of ownership and control of business. The chapter then highlights the role of SOBC in mitigating the agency problem by functioning on aligning the interests of managers and employees with those of shareholders. The main types of contractual specifications of SOBC usually used to tie the interests of the principle and the agent are addressed in this chapter. The role and the aim of each time and performance vesting stock grants and stock options in eliminating the agency problem are particularly highlighted. The main accounting classification of

[8] The five key institutional characteristic indicators used in Lee et al (2010) are outsider rights, the importance of the equity market, ownership concentration, disclosure quality, and earnings management

SOBC expense to cash-settled and to equity-settled expense is also addressed in this chapter. The former arises in transactions where a company receives services from its employees and incurs a liability to transfer cash based on the value of the company shares as consideration. By contrast, the latter classification arises in transactions where a company receives services from its employees and in consideration provides equity instruments of the company to the employees. The main difference of their accounting treatment as required by IFRS2/FAS123R is also briefly discussed in this chapter. The flexibility given to a company to re-estimate the fair value of cash-settled based compensations at the end of each reporting period and at the settlement date compared to the restriction of the grant date estimation for equity-settled share-based compensations is highlighted as well. The history and the nature of the debate about the financial reporting implications of the recognition versus the disclosure approach to account for the cost of SOBC are illustrated in this chapter. Finally, the chapter demonstrates how this debate remains a subject of widespread discussion internationally.

Chapter 3: Literature review and Hypotheses

3.1 Introduction

Earlier studies on financial reporting implications and valuation issues of the mandatory adoption of expensing the fair value of SOBC, have discussed and adopted numerous approaches to do so and by predominantly utilising US data. One specific line of research investigated the effect of the political pressure and the extensive lobbying behaviour prior to the mandatory imposition of the US-FAS123R on the decision to allow the choice of the disclosure rather than recognition approach to account for SOBC. Botasan and Plumlee (2001, p. 311) claim that SFAS 123 (*Accounting for stock-based compensation*) issued in 1995, was 'one of the most controversial accounting standards ever issued by the Financial Accounting Standards Board'. The political pressure, reflected by congressional intervention (Farber *et al*., 2007) along with the support from the accounting profession (see Dechow, *et al*., 1996) and business community (Hagopian, 2006) succeeded in preventing the FASB from mandating the recognition regime under FAS 123. This line of research also emphasised the concerns regarding high SOBC, particularly those paid to executives, which appeared to motivate lobbying behaviour (Dechow *et al*., 1996; Hill *et al*., 2002).

Another line of research was directed at the social implication of the mandatory expensing of SOBC. Ratliff (2005, p. 38), for example, highlighted that the mandatory adoption of IFRS2/FAS123R might "have detrimental effects on competitiveness and innovation" as a result of the possible decreases in net income and other related financial performance indicators. Ratliff (2005, p.39) also raised a concern about employees' fears that companies would discontinue SOBC programs if they were forced to include the value in net income. Indeed, following the transition from the voluntary to the mandatory

approach for expensing SOBC under FAS12R, US firms reduced the proportion of stock options to executives' total compensation (Brown and Lee, 2008), and the number of options granted across all levels of rank and file employees (Choudhary, 2008). Yet given that SFAS 123R eliminated accounting advantage of SOBC but not their motivational benefits, Brown and Lee (2011) stressed that firms only had incentives to reduce the portion of SOBC that was accounting-motivated and was not justified by real economic benefits in response to the issuance of SFAS 123R.

The financial reporting implications and valuation issues of expensing SOBC are also examined by market-based accounting research. For example, stock market reactions to voluntary announcements of expensing SOBC made by US firms are examined by this this one specific line of research (e.g. Ferri *et al*., 2005; Balsam *et al*., 2006; Bartov and Hayn, 2006; Carter *et al*., 2008). Recent studies (e.g. Balsam *et al*., 2008; Choudhary *et al*., 2009) examined the market reaction to firms that accelerated the vesting of some or all of their employee SOBC in advance of adopting FAS123R.

This chapter first highlights the lack of studies that focused on the financial reporting implications within the banking service given the widespread of using SOBC in this sector and the sensitivity of this sector to the risk induced by SOBC schemes. The chapter then critically reviews the existing literature on the economic consequences, the value relevance and the information content of the disclosed versus the recognised expense of SOBC. In more details, the third section of this chapter reviews the existing literature that used pre and post adoption data to estimate the negative impact of the mandatory adoption of expensing SOBC on companies' key financial indicators. The analysis distinguishes further between US and non-US studies. It highlights that US and pre-adoption studies dominates the existing literature. Yet given that the effect may differ across countries

according to their institutional contexts, non-US and post adoption studies, particularly studies on the effect of IFRS2/FAS123R on a wider national scale are not common.

The fourth section of this chapter reviews the existing literature and concentrates on examining the information content and the value relevance of expensing SOBC under the disclosure approach against that under the recognition approach. The analysis also highlights that given the mandatory adoption of two highly converged standards IFRS2 and FAS123R, this stream of literature generally assumes that the value relevance of disclosed versus recognised information is the same across firms, and that recognition of previously disclosed accounting items affects all firms homogenously. However, the extent to which users of financial reports understand disclosed versus recognised information may differ across different institutional contexts. Finally, the chapter further develops the related research's theoretical framework and hypotheses used to operationalize the standard setters' qualitative characteristics of the relevance and reliability of the disclosure versus recognition approach on an international basis, and taking into account reporting differences between various institutional settings.

3.2 Banking studies on the financial reporting implication of IFRS2/FAS13R:

Earlier studies that evaluated the financial reporting implications of IFRS2/FAS123 either controlled for industry sectors including the banking sector (e.g. Aboody at el., 2004a; Chalmers and Godfrey, 2005; Shiwakoti and Rutherford, 2010; Dhar and De, 2011; Niu and Xu, 2009), or alternatively pooled them together (e.g. Rees and Stott, 2001). Findings of studies that controlled for industry sectors, however, pointed out that the results in the banking sector is quite distinct compared to other sectors. For example, Dhar and De (2011) found that the reduction in the selected performance measures within the banking sector due to the adoption of IFRS2 was higher than the average reduction in those

measures for all sectors combined together[1] (see next section for further details). Shiwakoti and Rutherford (2010) observed that the financial service sector granted more options than any other over the period 2004-2006[2]. Chen at al., (2006: 943) reported evidence suggesting that the use of SOBC has become more widespread in the banking industry compared to that in industrial firms[3].

The banking sector has its unique characteristics that differ from those of other business sectors in terms of regulatory restrictions and their commensurate duties and responsibilities to depositors and investors. Given that the use of SOBC inclines to induce excessive risk-taking, SOBC explosion in the banking sector has been the central and most controversial issue on the level of SOBC offered to top executives and employees (Chen *et al*., 2006). Walker (2009) who later reviewed corporate governance in UK banks, pointed out that their culture of granting share-based incentives is viewed as excessive and it significantly induces risk taking. The association between excessive risk-taking and the widespread use of SOBC in banks makes them very susceptible to systemic crises which subsequently affect the whole economy.

All the above mentioned reasons highlight the significance of the use of SOBC in banks and necessitate the need to focus on the banking sector for the purpose of evaluating the major financial reporting implications of IFRS2. Focusing on the banking sector for the purpose of this thesis, indeed, responds to the lack of, and the need for additional studies on SOBC in the banking sector highlighted by earlier studies, such as Mehran and Rosenberg (2009).

[1] Dhar and De (2011) found that the mean (median) reduction in diluted EPS in banking services sector would have been material amounting to 6.26% (0.43%) and 7.70% (6.03%) in 2007 and 2008 respectively

[2] Shiwakoti and Rutherford (2010) reported that the average option expense in the financial sector was 40.92m, 28.85m, 20.46m for the period 2006, 2005, 2004, respectively.

[3] Chen et al (2006) found that options as a percentage of total compensation for the banking industry experienced a 115% increase (from 1993 to 1998) as compared to a 14.71% increase for the industrial counterparts.

3.3 Prior studies on the economic consequences of expensing SOBC

The compulsory adoption of IFRS2/FAS123R has played a key role in company financial reporting and its related financial performance indicators by radically changing the accounting treatment for SOBC schemes. Expensing the fair value of SOBC was often considered to reduce companies' reported earnings and other related accounting performance measures. Indeed, Sir David Tweedie (2002), the first chair of the IASB, estimated that the average reduction in the reported earnings of the top 500 US companies would be between 8% and 12%, if IFRS2 had been adopted in 2002[4]. Apostolou and Crumbley (2005) estimated that the expensing of SOBC in some companies such as Yahoo and Adobe would negatively affect their diluted earnings per share (EPS) reported in 2003 by 86% and 70% respectively. Identifying and evaluating the extent of the changes in firm earnings and other related financial indicators under IFRS2/FAS123 and across different intuitional settings is a matter of importance for financial reporting users particularly concerned with the economic consequences of expensing SOBC. Reported earnings and other related financial performance indicators are widely used in different contractual specifications, such as variable compensation contracts[5]. They also are used in estimating the firm's value and its ability to access capital markets. The following two subsections evaluate the outcome of pre and post-adoption existing studies on the impact of expensing SOBC on companies reported earnings and other related financial indicators.

3.3.1 Estimation using the pre- IFRS2/FAS123R adoption data

Empirical studies which were mainly conducted before the adoption of IFRS2/FAS123R provide evidence that if SOBC were treated as expenses, many financial performance

[4] CBA scraps options for transparency, Australian Broadcasting Corporation, 22/08/2002 by the reporter: Mark Westfield, available at: http://www.abc.net.au/7.30/content/2002/s656444.htm

[5] Accounting performance indicators such as ROA, ROE, EPS, are one of the basic motivation aspects used to determine the amount of compensation in the variable compensation contracts.

indicators would be substantially affected. More specifically, the earliest systematic attempt to estimate the effect of option expensing on firms' performance indicators was conducted by Botosan and Plumlee (2001), utilising two widely used performance measures, diluted earnings per share [DEPS] and return on assets [ROA]. Their sample covered 100 US companies[6] that had over $50 million for both their revenues and market values as well as a high growth rate of more than 30% in both total revenues and EPS over the last three years. Botosan and Plumlee justified their sample selection by arguing that this set of companies uses option grants more than other firms. Therefore, if the impact of expensing options is immaterial for this set, it will be immaterial for others. Utilising the 5% materiality threshold, their results indicated that the mandatory expensing of stock options would substantively influence both the diluted EPS and the ROA. Botosan and Plumlee reported that the mean (median) reduction in diluted EPS and ROA due to share options expensing would be 22.9% (14%) and 22.8% (13.6%) respectively. They also predicted the doubling of the magnitude of this effect over the next three to five years. However, it is important to highlight that their results cannot be generalised to other countries or other sectors, particularly where they focused only on highest and fastest earning growth US companies. These companies use share options extensively to compensate their employees, while other companies in different sectors or countries might use share options moderately and therefore they will be less affected by the standard. Furthermore, 12% of the selected companies did not totally comply with the requirements of FAS 123.

Chalmers and Godfrey (2005) examined the impact of option expensing on selected financial performance indicators of 159 companies based in Australia and across various

[6] The selected companies were ranked by Fortune's September 1999 magazine as "America's Fastest Growing Companies".

business sectors and with various earning growth levels. Their analysis is mainly based on examining the impact of expensing the options granted only to directors and five senior executives in 2002 on three key earnings financial ratios [ROA, ROE and diluted EPS]. They assumed that the vesting period of granted options is three years and the options are granted for the first time on 1st January 2002. Furthermore, they assumed that share options are granted at a relatively fixed level, such that the expense will increase yearly and stabilise after three years when the option cycle is completed. Chalmers and Godfrey (2005) reported that the initial (first year) mean (median) reduction in ROA, ROE and diluted EPS, if firms started to recognise share options as an expense in 2002, was 3.76 % (0.34%), 13.63% (0.41 %) and 13.67% (0.40%) respectively. However, once the option cycle was completed and the expense had stabilised after three years, the mean (median) reduction in ROA, ROE and diluted EPS was 11.29% (1.01%), 40.89% (1.22%) and 41% (1.21%) respectively. Furthermore, using the 5% threshold of materiality, the reduction in the performance ratios due to share option expense was material only for 20% of their sample. Finally, Chalmers and Godfrey (2005) utilised two growth measures, the 3 year EPS growth and the market price to book ratio to determine if the impact of option expense significantly varies between high and low growth firms. Using the 3 year EPS growth as a growth proxy, they found that the materiality of option expense is larger for high EPS growth firms. By contrast, under the alternative growth proxy (price to book value) the impact of option expense does not vary significantly between high and low growth firms.

It is significant to note that Chalmers and Godfrey's (2005) study assumed that firms would continue to grant options at a steady level if IFRS2 had been mandatory. By contrast, Seethamraju and Zach (2004) and Ratliff (2005) argue that companies may respond to IFRS2 by reducing the options grants to avoid the effect of options expense

recognition on their financial ratios. Such a deficiency can be eliminated by using pre and post adoption data for a longer period (2004-2011). The findings of Chalmers and Godfrey (2005) also suffered from a systematic bias in terms of underestimating the impact. That is, whilst the requirements of IFRS2/FAS123R apply to all elements of SOBC, granted to all employees, they reported the effect based on options granted only for directors and the five most senior executives.

Saiz (2003) studied the potential effect of expensing share options granted to executives from July 1996 through to June 2002 on diluted EPS. The study also focused on two Australian companies from the healthcare industry. The findings reveal a significant effect on diluted EPS for one company and insignificant for the other. For the first company, the study shows a substantial reduction in diluted EPS, particularly over the last three years (i.e. 2000, 2001 and 2002) where the reduction was 21.1%, 11.77% and 26.2% respectively. However, the reduction in diluted EPS due to the options expense for the second company was found not to be significant.

In a different context, Dhar and De (2011) studied the potential impact of IFRS2 adoption on diluted EPS, ROA, and ROE of Indian firms that were required to apply IFRSs from the 1st April 2011. Their analysis is based on data drawn from 69 listed Indian companies in 2007 and 120 companies in 2008. Their findings suggest that expensing of share options would have a material effect on the selected performance indicators utilising the 5% materiality threshold for at least 22% of their sample.

However, they reported that the impact was more moderate compared to the earlier mentioned studies. They found that the mean (median) reduction in the diluted EPS, ROA, and ROE, as if IFRS2 had been implemented in 2007, would have been 4.7% (2.56%), 3.70% (1.36%) and 5.47% (2.5%) respectively. The corresponding reduction in

the mean (median) of diluted EPS, ROA, and ROE for the year ended 2008 would be 5.43% (1.64%), 3.77% (0.86%) and 6.06% (1.25%) respectively. More significantly, their results show that the mean (median) reduction in diluted EPS in banking service sector would have been material amounting to 6.26% (0.43%) and 7.70% (6.03%) in 2007 and 2008 respectively. Finally, Dhar and De (2011) found that the differences in ROE, ROA, and diluted EPS did not vary significantly between high and low growth companies measured by price to book ratio. Overall they argue that the Indian companies would experience a less sensitive impact in comparison to that of the US or Australia. They justified their argument by the fact that the use of stock options in India is less compared with many other countries.

However, one may argue that the more moderate impact reported in Dhar and De's study compared with that of different studies can be due to other factors. One important explanation is that they consider only share options granted to firms' directors and neglecting grants to other employees and other types of SOBC, such as share appreciation rights. Dhar and De (2011) reported also that 37% of their sample that uses option grants had been excluded from the analysis due to the non-availability of disclosure required to conduct the analysis. Such exclusion might affect their estimations had these companies disclosed data concerning the SOBC and included within the analysis. The time period covered in their study also make their findings subject to a systematic bias. Firms might grant options on a yearly or even on a longer basis whether at a steady or unsteady level. The magnitude of the effect needs at least three to five years to be clarified when the option cycle is complete. Therefore, covering a longer period, considering pre and post

adoption data, and considering all types of SOBC[7] will eliminate any systematic bias related to those issues.

Street and Cereola (2004) was the earliest attempt to estimate the likely effect of expensing options grants on diluted EPS and opening stockholders' equity (book value), at an international level for the year ended December 31, 2000. Their sample includes 291 non-domestic companies domiciled in other seven countries[8], yet listed in the US. Their findings reveal that the mean (median) reduction in diluted EPS if option grants were expensed, would be 41.19% (6.29%) and it is material using the 5% threshold level for the majority of their sample. They also report that the average pro-forma options expense expressed as a percentage of opening stockholder's equity is 14.96% and it is material for the majority of their sample. They also found evidence that the average reduction in net income due to option grants expensing is 38.95% in 2000. In more detail, their results show that the average impact of option expenses on [DEPS] is more than 40% for companies situated in France, Ireland, Germany Canada, and the U.K. However, for firms situated in Australia and Japan the results show that the impact is around the 5% materiality level. Notably, for some of their sample, Street and Cereola reported a decrease in diluted EPS of more than 100%. Consistently, the average effect of option expenses as a percentage of opening equity was substantially material in companies located in all the countries except for those located in Australia and Japan. The results finally suggest that the effect of the mandatory expensing of SOBC on diluted EPS and opening stockholder's equity varies significantly by country.

The study of Street and Cereola (2004) discussed and estimated an initial international generalisation utilising one year pre-adoption data of non-domestic companies but listed

[7] Share based payments includes share options and other similar equity awards, such as share purchase plans, as well as cash-settled awards where the cash payment depends on the share price as in the case of share-appreciation rights.
[8] These countries were: Australia, Canada, France, Germany, Ireland, Japan, and the U.K.

in the US. Yet their results might not be representative of all companies domiciled in the selected countries and by using post adoption data. Street and Cereola (2004, p. 36) therefore called for additional research 'to ascertain the impact of expense recognition on a broader range of firms and for more performance indicators' as data becomes available under IFRS2/FAS123R.

3.3.2 Evidence of impact of expensing SOBC using post IFRS2/FAS123R adoption data

Subsequent to the adoption of the IFRS2/FAS123R in 2004, there have been only two major studies that examined the post-adoption effect of IFRS2/FAS123R. The first study was conducted by Schroeder and Schauer (2008) in the US context. They examined the actual effect of SOBC expensing for a sample of 90 companies listed in the Russell 3000 index[9], with a reporting fiscal year-end of 30th June, 2006. They utilised 0.5% of revenue and 5% of pre-tax net income (loss) to assess the materiality of the impact. Their findings suggest that mandatory adoption of FAS123R had a material effect on all companies, irrespective to their size. These findings contradict the argument that the effect would be more likely to be material only for larger companies that tend to use SOBC packages less than smaller companies (See Barrier, 1994; El-Gazzar and Finn, 1998). More specifically, the results reveal that SOBC expensing did not result in a material effect on companies' total revenues. However, consistent with earlier estimations, the weighted average effect on net income (loss) due to option expensing was material 15.91% (33.55%). Pointedly, they claim that the effect of SFAS123R tended to be more material for smaller sized companies than it was for their larger counterparts. Although their results are different

[9] The Russell 3000 index is a stock market index of the 3,000 largest US companies based on their total market capitalization and it is reconstituted each May 15. This index represents approximately 98% of the entire US market.

from earlier predictions, they concluded that the effect of FAS 123R is still controversial and more research is needed to ascertain its economic consequences over longer period.

However, despite the significance of Schroeder and Schauer's findings, it is still subject to some weaknesses. The lack of information about the nature of firms in their sample is one important factor that might lead to obtaining such significant results that differ from earlier predictions. In fact, there is no evidence about the nature of the sectors these firms belong to, where earlier studies predict the effect might vary extensively from one business sector to another (Street and Cereola, 2004, p. 33; Chalmers and Godfrey, 2005, p. 166).

Shiwakoti and Rutherford (2010) examined the impact of IFRS2 adoption on selected measures from a sample of 266 UK companies included in the FTSE 350 index. Their study utilised four main performance indicators (ROA, ROE, EPS and SOBC as a percentage of opening stockholders' equity) over the period 2004 to 2006, where 2004 falls before the adoption and 2005 and 2006 fall afterwards. Out of line with earlier estimations, their findings reveal that the effect of IFRS2 in the UK is modest. They reported that in 2004 the mean (median) reduction in ROA, ROE, and EPS due to SOBC expensing was not material at the 5% significance level.

However, in 2005 and 2006, the reduction in the selected performance measures due to IFRS2 adoption was slightly above 5% implying a modest impact. In particular, Shiwakoti and Rutherford (*ibid.*) reported that the impact varies between sectors; and it is slightly higher for the larger sized and more rapidly growing companies, being highly material in certain individual instances. Finally, Shiwakoti and Rutherford (*ibid.*) point out that mandatory adoption of IFRS2 might have reduced the growth rate of SOBC grants in some individual instances. Yet the expected decrease in using SOBC grants does

not appear to have taken place. The average option expense in absolute value was $17.84m, $15.16m and $13.17m over the period 2006, 2005 and 2004 respectively. However the differences in the recognised share option expense over the period 2004 to 2006 were not statistically significant.

Although the reported effect in their study was modest, the reduction in the selected performance measures, due to SOBC expensing, increases significantly over the studied period (only two years post-adoption data). Essentially, in the last year 2006, the mean reduction in diluted EPS, ROA, and ROE was 24.55%, 13.30% and 13.47% suggesting a substantial impact and not modest as previously reported. The justification for such an increase might be due to the option cycle conditions, the increased use of SOBC, or the decrease in firms' reported earnings or other factors. Therefore, to alleviate any speculation related to this issue, this thesis covers a longer period (2004-2011) in order to identify and evaluate the longer-term effect.

More importantly, while the few post adoption existing literature provides evidence on the effect of IFRS2/FAS123 only on a single context, it is silent on the effect of IFRS2/FAS123R on an international level. As discussed earlier in the previous section, the study of Street and Cereola (2004) discussed and estimated an initial international generalisation, by utilising one year pre-adoption data of non-domestic companies listed in the US. Their results, yet, might not be representative of all companies domiciled in the selected countries and using post adoption data. Considering the differences in the institutional reporting settings and using a pre and post adoption international sample that covers a longer time-span, consequently, will add a wider external validity for assessing the impact of IFRS2/FAS123R on the wider international setting rather than the more constrained Street and Cereola (2004) study. (i.e. one year pre-adoption data of non-domiciled companies but listed in the US)

3.4 The value relevance and the information content of the voluntary versus the mandatory expensing of SOBC.

Although "usefulness" is not a well-defined concept in accounting research (Barth *et al.*, 2000), the usefulness of accounting information is defined by standard setters as depending on information that is relevant and reliable (see SFAC No. 2, FASB [1980]). An accounting amount is relevant if it is capable of making a difference to financial statement users' decisions (see SFAC No. 2, FASB [1980]). The reliability of a specific measure as suggested by the FASB depends on "the faithfulness with which it represents what it purports to represent, coupled with an assurance for the user, which comes through verification, that it has that representational quality" (SFAC No. 2, FASB [1980, para. 59]).

Relevance and reliability are also the two primary criteria the FASB uses for choosing among accounting alternatives, as specified in its Conceptual Framework. Determining informational location in financial reporting has been one of the controversial issues faced by standard setters, particularly whether to recognise the estimated amounts within the financial statements or disclose them in the way of footnotes. Since Johnson (1992), such an issue has attracted a large body of research that has sought to operationalise the relevance and reliability criteria in examining whether the usefulness of information disclosed in the footnotes is distinct from that recognised on the face of the financial statements. Topics that have been the subject of this line of research and for which the Financial Accounting Standards Board (FASB) has debated the information location include accounting for SOBC expense, post-retirement benefits, and others.

A few earlier accounting studies build their argument on the semi-strong form efficient market hypothesis to show that recognition versus disclosure of accounting information should make no difference as long as the information is publicly available. Dhaliwal

(1986) and Imhoff *et al*. (1993, p.362), for example, provide empirical support for the ‘‘no difference’’ view on disclosure versus recognition of unfunded vested pension and lease obligation respectively. Yet more recent accounting research generally finds that recognition is different from disclosure in terms of value relevance (e.g., Ahmed *et al*., 2006) and contracting costs (e.g., Espahbodi *et al*., 2002).

Prior literature suggests a few reasons that might explain why primary users of financial statements may perceive disclosed information distinctly from that of recognised information. One specific line of research proposes some information-processing-related factors as one of the potential reasons to the differential treatment of disclosed versus recognised information (e.g., Barth *et al*., 2003; Hirshleifer and Teoh 2003). The lack of competence to understand disclosure (e.g., Dearman and Shields, 2005), paying limited attention to disclosure (Hirshleifer and Teoh 2003), and the effect of cognitive biases unrelated to user competence when processing disclosed information (e.g., Koonce *et al*., 2005; Hobson and Kachelmeier 2005) are examples of these factors. Consistent with this view, experimental studies provide evidence that users discount or ignore disclosed information, but not recognised information. For example, users are more likely to understand information recognised in the income statement more than information disclosed in the statement of changes in equity or disclosed in the footnotes (e.g., Maines and McDaniel 2000; Hirst and Hopkins 1998; Hirst *et al*., 2004).

Although this line of research that generally focused on one group of experimental subjects has provided rich insights into the differences between recognition and disclosure, the reported evidence may not generalise to the association between stock prices and disclosed versus recognised items. As such, another stream of literature has emerged and proposed reliability as one of the possible reasons that can determine information location. Davis-Friday *et al*. (2004) find that the market perceives disclosed

post-retirement benefits (PRB) liabilities as less reliable than recognised PRB liabilities. Libby *et al*. (2006) find that auditors tolerate less misstatement of recognised items than disclosed items. Johnson and Storey (1982) argue that one rationale for relegating amounts to the footnotes is that the information is less reliable due to significant uncertainty associated with measurement of the amount. For example, opponents to expensing SOBC often argue that the estimates arising from the fair-value method under IFRS2/FAS123R are unreliable (Malkiel and Baumol, 2002). Frederickson *et al*. (2006) find that mandatory income statement recognition of SOBC expense leads to user assessments of reliability being higher than either voluntary income statement recognition or voluntary footnote disclosure.

The information content of the fair value of SOBC expenses either recognised in the financial statements, or disclosed under the predominant alternative choice of pro-forma disclosure of FAS123 has also been a subject of specific line of research. This line of literature attempts to operationalize the standard setters' qualitative characteristics of relevance and reliability by using empirical models underpinned by the equity valuation theory (Barth *et al*., 2001). The evidence from this specific line of research, however, is mixed. Aboody (1996) and Chamberlain and Hsieh (1999), for example, documented a significantly negative relationship between share price and fair value of option grants, calculated based on assumed inputs to the utilised valuation models. Aboody *et al*. (2004a) examined whether SOBC expense disclosed under *pro forma* net income, as allowed by FAS 123, is perceived sufficiently reliable for investors' valuation assessments. They used pooled regression using Ohlson's (1995) model on selected US firms across many industries that use SOBC substantially and listed in S&P Composite 1500 from 1996 to 1998. They documented a negative relationship between stock returns and disclosed SOBC. Their results suggest that disclosed SOBC expense is perceived as

relevant expense by investors and sufficiently reliable to be reflected in their valuation assessments. Similarly, Li (2003) found a negative association between share prices and both outstanding employee share options and expected share option expense, and that FAS123 disclosures provide useful information to investors for estimating the effects of employee share options on equity value.

By contrast, Rees and Stott (2001) examined the relationship between annual stock returns and pro forma footnote disclosure for stock options expenses based on 756 US listed firms at the 1996 fiscal year end. They found a positive relationship between option expenses, as disclosed under the pro-forma company footnotes, and annual stock returns. This suggests that investors perceived disclosed fair value of stock option expenses in the footnotes, as a relevant and reliable measure that reflects a value-increasing asset to the firm value. That is, the positive relationship between annual stock returns and disclosed options expenses imply that incentive benefits in share-based payments dominate their dilutive effects and increase the firm value. Hanlon *et al*. (2003) also reported a significant positive relationship between future operating earnings and stock option expense for top five executives calculated using the Black-Scholes model[10]. Rees and Stott (2001) also documented that growth opportunities, proxied by firm size (MV), Tobin's Q-ratio[11], and dividend policy, were found to significantly moderate relationship between market value and the fair value of stock options. That is, investors assign

[10] The IASB and the FASB do not prescribe a specific formula or model to be used for option valuation. Yet most companies prefer to use the Black-Scholes model since it is the easiest to implement in a company, particularly if a company lacks data or resources for a more accurate valuation (Landsberg, 2004). The Black-Scholes (B-S) model calculates a theoretical call price (ignoring dividends paid during the life of the option) using the five key determinants of an option's price: the current market price of the share that underlies stock option at grant date, the exercise price of the option, the expected volatility of the share price, time to expiration, and short-term (risk free) interest rate. Merton (1973) adjusted BS model for dividends expected to be paid on the shares.

[11] Tobin's Q-ratio is usually used in finance literature to measure growth prospect. It is calculated as following: (Market value of equity+ book value of debt + book value of preferred stock) / book value of total assets. The higher is the ratio, the higher is the growth rate.

significantly higher weight for disclosed options expenses when valuing firms with high growth opportunities.

The rational logic standing behind their argument is that small companies usually have greater potential for growth opportunities. Granting stock options extensively plays a key role in increasing growth opportunities in small companies, given their higher demand for cash in the short-term. Therefore, companies with high growth opportunity (small companies) benefit more from disclosing information about stock option expenses in their footnotes. Such that, investors perceive the fact that employees agree to have their stock options compensations in a longer term (exercise date) as a positive signal in valuing firms' equities.

Bell *et al*. (2002) also examined the relationship between SOBC as reported in the pro forma disclosure and annual share returns. They documented a significant positive relation between the disclosed expense of SOBC and market returns. Yet they acknowledge that their finding has limited generalisability because the selected sample is restricted only to profitable computer software firms over the period 1996-1998. Brown and Yew (2002) also examined the association between price and employee stock options using a sample of 121 public Australian firms over the period 1997-2000. They found a positive relationship indicating that the market prices the disclosed expense of SOBC as an intangible asset.

Niu and Xu (2009) also studied whether the value relevance and reliability of SOBC expenses to investors' valuation are enhanced after mandating the recognition regime on a sample of Canadian firms. Their sample consists of Canadian companies listed on Toronto Stock Exchange for the years 2003-2005 where 2003 falls before mandating the recognition approach whereas 2004 and 2005, fall after. Niu and Xu (2009) documented

a significant positive relationship between mandatorily (but not voluntarily) recognised SOBC and stock returns. Their results suggest that investors perceived recognised SOBC expense as a relevant and reliable amount (asset) that contributes to firm value. They also investigated whether some accounting and market prospects, such as firms' growth represented by market to book value, firm size measured by the logarithm of total assets and industry classification (high tech and financial institution versus other firms), contribute to more incremental information content related to recognised SOBC expense. Their results suggest that the value relevance and reliability of recognised SOBC expense do not change significantly with industry affiliation and growth prospects. That is, investors perceive the recognised expense of SOBC as value relevant and reliable measure for firm valuation across all industry sectors. The same finding is also applicable to firms with low or high growth opportunities. However, the firm size prospect was found to be significant suggesting that the value relevance and reliability of SOBC expense seem to be more apparent in larger firms. It is important to highlight that these three prospects are included in the model only by interacting them with recognised SOBC expenses. Yet these prospects are not included by themselves in the model. This is in fact a straightforward case of variables omission that may bias their reported results (See Greene, 2003; Hayes, 2013).

Indeed, the extant literature provides mixed evidence of the direction and the significance of the reported relationship between SOBC expenses and firm value. This could be due to the absence of the absolutely explicit pro-forma disclosure for SOBC grants prior to the introduction of FAS123R/IFRS2 (Skinner, 1996). Earlier studies that employed pro-form disclosure (e.g. Aboody, 1996; Hanlon *et al*., 2003; Aboody *et al*., 2004a,b) exercised some discretion or assumptions in setting up inputs of an option valuation model. More importantly, the general evidence available from the majority of previous

pre-adoption studies suggests a negative relationship between the disclosed amounts of SOBC expense and share price (Aboody, 1996; Chamberlain and Hsieh, 1999; Li, 2003; Aboody *et al.*, 2004a; Balsam *et al*., 2006). This negative relationship also implicitly suggests that disclosure approach fails to reflect the long-term "intangible" effect of SOBC on the financial statements. Aboody *et al*. (2004a) highlighted that results of research concerning the value relevance and reliability of disclosed expense of SOBC might not be the same of those obtained using the recognition but not the disclosure approach. They conclude that the direction, the magnitude, and the significance of the reported relationship between SOBC and firm value after the mandatorily adoption of IFRS2/FAS123R is still vague and needs additional research. Furthermore, SOBC are granted to all employees in different levels. This implies that the focus on only top five executives is more likely to impact the reported coefficients that reflect the relationship between SOBC expense and its market valuation.

More importantly, prior studies (e.g. Rees and Stott, 2001; Chamberlain and Hsieh, 1999; Li, 2003; Aboody *et al*., 2004a) on the value relevance of recognition versus disclosure assume that the value relevance and reliability of disclosed versus recognised information, is the same across countries and that recognition of previously disclosed accounting items affects all the reporting settings homogenously. However, the extent to which users of financial reports understand disclosed versus recognised expense of SOBC may differ significantly across firms that operate in different institutional settings.

Overall, while the majority of previous studies focused on the information content, value relevance and reliability of the disclosure, or the recognition approach to account for SOBC using pre-adoption data, only a few studies focused on the position after the introduction of IFRS2/FAS123R. Yet the extant literature of this line of research is silent on, or provides limited insight into the information content, value relevance and reliability

of the recognition versus disclosure regime on an international scale. Expanded disclosures and accounting practices prior to IFRS2/FAS123R, and mandatory expensing of SOBC after IFRS2, provides a natural setting for comparing the valuation implications of the disclosure versus the recognition approach to account for SOBC on an international scope. This thesis, therefore, provides further evidence from an international perspective into the recognition, measurement, and comparability issues related to the accounting for SOBC in the banking industry. The next section further develops the related research's theoretical framework and hypotheses used to operationalize the standard setters' qualitative characteristics of the relevance and reliability of the disclosure versus recognition approach to account for SOBC on an international basis taking into account reporting differences between various institutional settings.

3.4.1 Theoretical framework

The value relevance and the reliability of the disclosure approach to expensing the fair value of SOBC, particularly prior to the adoption of IFRS2/FAS123R, has been a subject of interest for prior studies. The evidence from these studies generally shows that the disclosed amount is perceived by investors as an expense (negative), and is value relevant and reliable to be incorporated into firms' equity market valuation. However, important factors suggest that the impact of SOBC on a firm's value could be different compared to that of other operating expenses.

Firstly, SOBC schemes can be very effective in motivating corporate managers and employees. Agency theory suggests that SOBC are mainly granted to motivate employees in general and managers in particular, and to align their interests with those of shareholders (Jensen and Meckling, 1976). Yet the general evidence available from previous pre-adoption studies indicates that the disclosed fair value amounts of these compensations are perceived as expenses (negative) by market participants (e.g Aboody,

1996; Chamberlain and Hsieh, 1999; Li, 2003; Aboody *et al.*, 2004a; Balsam *et al*., 2006). This implicitly suggests that the disclosure approach fails to reflect the long-term "intangible" effect of SOBC as value-increasing assets on the financial statements. Disclosure, however, is not a sufficient substitute for recognition. The mandatory recognition approach under IFRS2/FAS123R arguably aims to mitigate the international differences in measuring the cost associated with the SOBC grants, and thus to deliver "more relevant and reliable information" to market valuation cross all the settings that adopted these standards (FASB, 2004; IASB, 2004). This argument may also implicitly suggest that investors would effectively capture the "intangible" effect of the recognised SOBC expense as a value-increasing asset and reflect it in the equity value of the firm.

Secondly, the desired impact and the economic effect of the IFRSs is more likely to vary internationally depending on the specific contextual factors governing the financial environment (Nobes and Parker, 2013; Branson and Alia, 2011; Street and Cereola, 2004). Kanagaretnam *et al*. (2014) emphasise that accounting information quality of banks tends to vary with institutional factors across countries. Hung (2001) documented in his international study that the nature of the legal system measured by the level of investors' protection in a given country improves the value relevance of accounting information which mainly depends on the accrual accounting system. Ball *et al.* (2000; 2003) and Ball (2006) also pointed out that the desirable properties of accounting income is more likely to vary among different contexts according to their legal traditions. For example, under the shareholders' governance model, which is typical in common-law countries, shareholders alone elect members of the governing board. Pay-outs such as SOBC packages are also less closely linked to current-period accounting income and more related to future income. Consequently, public disclosure is a more likely solution for the information asymmetry problem in common law countries. By contrast, the demand for

accounting income in codified law countries is influenced more by the pay-out preferences of agents for labour, capital and government, and less by the demand for public disclosure (*ibid.*). Such an argument implicitly suggests that the incentive benefits of SOBC packages is expected to be more effective in reducing the agency cost across common law countries than that of code-law countries where it is influenced by pay-out preferences of agents. That is, market participants in common law countries are expected to assign more weightings to the incentive features of SOBC as motivating tools to reduce the agency cost and to perceive the associated cost as an increasing-value asset more than that in code-law countries.

Furthermore, previous research indicates that the accounting treatment of SOBC under the fair value approach provides scope for managers to exercise their discretion and eventually manage the earnings of firms. For example, Aboody *et al*. (2006) reported evidence that managers manipulate SOBC expenses disclosed under SFAS 123 in order to avoid political costs associated with executive compensation. The recognition of an item using the fair value approach in the financial statements, also, introduces the measurement issue. Opponents to mandatory recognition (see Aboody *et al*., 2004b) argue that fair values of SOBC may not be reliably measured under the available valuation models that involve management discretions. If the market anticipates this discretion, this will be negatively reflected on weightings placed on the SOBC expenses. The level of management opportunism in a given context might, therefore, have an offsetting impact on the extent to which market participants perceive the recognised expenses under IFRS2/FAS123R as reliable and relevant accounting information.

The weighting on the incentive benefits derived from SOBC is also more likely to be higher in countries that are less likely to be subject to earnings manipulations. La. Porta *et al*. (1997) argue that the level of management opportunism is more likely to be higher

in an environment characterised by a lower level of investors' protection. As such, re-examining the observed market pricing of the disclosed versus the voluntarily recognised SOBC expense prior to the mandatory adoption of IFRS2/FAS123R is expected to add to our understanding of the value implications across different institutional contexts. More importantly, to investigate whether the mandatory recognition adds value, the information content, the value relevance and reliability of expensing SOBC after the mandatory adoption of IFRS2/FAS123R to market participants is also examined and compared across different institutional contexts. If the market is efficient, in theory there should be no difference between the information content of recognised information and that of disclosed information (Dhaliwal, 1986; Imhoff *et al*., 1993; Kothari, 2001). That is, market participants value substance over form and hence, where the information is presented would not matter. However, Bernard and Schipper (1994) argue that if market participants view footnote disclosures as being less reliable or are not sophisticated enough to make appropriate adjustments, they will likely assign more importance to recognised financial statement items and this will manifest itself in greater value relevance.

Indeed, researchers have provided supporting evidence that the method of presentation in the financial statements does matter (e.g., Ahmed *et al*., 2006; Espahbodi *et al*., 2002), and depending on who uses the financial statements and how naive they are in interpreting footnote disclosures (Imhoff *et al*., 1993, 1995). However, this stream of literature generally assumes that the value relevance of disclosed versus recognised information is the same across firms and that recognition of previously disclosed accounting items affects all the firms homogenously. Different institutional contexts arguably affect market participants' decisions to assign the appropriate weightings to the incentive derived from SOBC. That is, the extent to which users of financial reports understand disclosed versus

recognised information may differ across different institutional contexts. Consequently, it is an empirical question as to whether the market perceives the recognition of SOBC expenses as incrementally useful and better reflects the intangible value attributable to SOBC, consistently across different contexts that adopted the IFRS2/FAS123R.

3.4.2 Hypotheses development

Prior to the mandatory expensing of share options, firms had a choice to choose between the pro-forma disclosures in the financial statements' footnotes, and the voluntary recognition in the income statement. In an efficient market, the decision to recognise a disclosed amount conveys no new information. That is, the recognition decision should not have any equity valuation effect (Aboody et al, 2004b). The available evidence from US studies suggested that market participants incorporate the disclosed expense of SOBC into price negatively as in the case of other operating expenses, such as salaries. (Aboody, 1996; Chamberlain and Hsieh, 1999; Li, 2003; Aboody *et al*., 2004a; Balsam *et al*., 2006). However, for US firms that voluntarily adopted the recognition regime of expensing SOBC, Aboody *et al*. (2004b) argue that these firms chose to recognize SFAS 123 expense because the benefits exceed the costs. Firms are capital rationed and seek to fund future operating activities by borrowing from competitive creditors. Hughes and Levine (2003) argue that firms that publicly commit to conservative accounting choices credibly convey favorable private information about future cash flows by signaling that they expect to meet earnings-based thresholds.

Voluntarily recognition of SOBC expense is a conservative accounting choice consistent with that modeled in Hughes and Levine (2003) because it is more likely to lower net income relative to the disclosure-only alternative. SFAS 123 also states that the FASB regards recognition as preferable to disclosure. Thus, firms with more favorable future

prospects can use SFAS 123 expense recognition to differentiate themselves from firms with less favorable.

Furthermore, unlike if it is disclosed in the footnote, the recognised expense of SOBC would also be under further scrutiny of external auditors. As such, investors' perceptions of future cash flow might be revised upward to reflect the intangible feature of SOBC. SOBC aims to mitigate the agency problem giving the willingness of those talented managers and employees to be compensated based on the long-term future performance and service. Being compensated with a condition to better drive companies' future performance over the long-term is associated with an extra market risk factor. Market participants are expected to compensate the risk factor associated with SOBC expense compared to other operating expenses such as salaries or bonuses which are paid based on the past services or performance. Aboody *et al*. (2004b) reported a positive and significant announcement returns for earlier announcing firms, particularly those stating that increased earnings transparency motivates their decision. The previous discussion leads to the following empirical prediction:

> *H*1: Prior to the adoption of IFRS2/FAS123R, investors incorporate the disclosed expense of SOBC into price negatively, whereas they incorporate the voluntary recognised expense into price positively.

IFRS2/FAS123R requires SOBC to be recognised as an expense measured at the grant-date fair value over the vesting period. The accounting treatment of SOBC is mainly based on the accrual accounting system. It particularly matches the incurred expenses with the services received from employees in exchange for valuable equity instruments issued by the employer over the option' expected vesting period. The level of investors' protection (Hung, 2001), and the nature of the legal system (Ball *et al*., 2000; 2003) in a given reporting context or country found to significantly influence the value relevance and

reliability of accrual accounting information. Ball *et al*. (2000:2) concluded that "enhanced common law disclosure standards reduce the agency costs of monitoring managers, thus countering the advantages of closer shareholder-manager contact in code-law countries". Furthermore, a lower level of investor protection might imply a higher probability for management discretion tendency and to use SOBC opportunistically as a way to reward managers and employees (agents) for their part of the profit. That is, the variation in the country-level institutional and legal variables is also expected to influence investor valuation for the disclosed expense of SOBC. The relationship between the disclosed expense of SOBC grants and equity valuation should be more pronounced in common law countries where these grants are arguably used to reduce agency costs and are more likely to be subject to a lower level of management discretion. Based on this discussion, the second tested hypothesis is:

> $H2$: The degree to which investors incorporate the disclosed expense of SOBC into price negatively is likely to higher in banks that operate in countries with a legal system classified as common law.

Disclosure is not a sufficient substitute for recognition. However, the recognised SOBC expense is believed to provide more relevant and reliable information to market participants concerning the costs incurred by the employer and the derived incentive benefits from granting SOBC to employees (FASB, 2004, IASB, 2004). SOBC aims to drive companies' future performance over the long-term and is associated with extra market risk factor. Market participants are expected to compensate the risk associated with SOBC expense compared to other operating expenses such as salaries or bonuses which are paid based on the past services or performance. In addition, unlike if it is disclosed in the footnotes, the recognised expense of SOBC would also be under further scrutiny of external auditors. As such, investors' perception of future cash flows might

be revised upwards. Since investors are normally expected to favorably appreciate the incentive impact of SOBC on the issuance firm performance, they will therefore react positively to the incurred expense under the recognition regime. The third tested hypothesis, therefore, is:

> *H*3: The mandatory expensing of SOBC is value relevant to market participants on an international scale and better reflects the intangible feature of SOBC.

Both the IASB and the FASB claim that the mandatory recognition approach to SOBC under IFRS2/FAS123R aims to improve the comparability of financial information around the world. It also makes the accounting requirements for entities that report financial statements under both US GAAP and international accounting standards less burdensome. As such, the effect of variations in the level of investor protection and the type of the legal tradition in a given reporting system on the reliability and relevance of the recognised SOBC expense is expected to be mitigated or diminished under the mandatory adoption of IFRS2/FAS123R. Based on this discussion, the fourth tested hypothesis is:

> *H*4*:* The effect of the variation in the levels of investor protection among nations, on investors pricing to SOBC expense is likely to mitigated after the mandatory adoption of IFRS2/FAS123R.

Earlier literature has suggested that characteristics of firms, such as size, potential growth, and industry classification (high-tech and financial institutions versus other firms) moderate the value relevance and the reliability of the disclosed (Rees and Stott, 2001; Aboody *et al*., 2004a) and the recognised expense of SOBC (Niu and Xu, 2009).

Rees and Stott (2001) argue that firm' size and growth opportunities significantly moderate the relationship between market return and the disclosed expense of SOBC.

They suggest that investors assign significantly higher weightings for disclosed SOBC expenses when valuating equity of smaller/higher growth opportunities firms. The rational logic standing behind the size/growth opportunities' argument is that small companies usually have higher investment opportunities. Granting SOBC extensively plays a key role in increasing growth opportunities in small companies, given their higher demand for cash in the short-term. Therefore, companies with high growth opportunity (small companies) benefit more from disclosing information about SOBC expenses in their footnotes. Investors perceive the fact that employees agree to have their compensation rewards (SOBC) in longer term (exercise date) as a positive signal in valuing smaller/higher growth firms' equities. Based on the aforementioned argument the next tested hypothesis is that:

> *H*5*:* The intangible feature of the recognised amount of SOBC is more pronounced in smaller banks and in banks with higher growth opportunities.

A considerable body of theory posits that SOBC offers incentives to risk-averse managers to invest in high-risk high-return projects on behalf of risk-neutral shareholders (e.g., Jensen and Meckling, 1976; Lambert *et al*., 1991; Murphy, 1999; Hemmer *et al*., 1999). Chen *et al*. (2006); Smith and Watts (1992) and Mayers and Smith (1992) highlighted that the specific nature of the business and regulatory environment under which banks operate compared to nonbank counterparts can affect the incentives benefits derived from SOBC contracts. In particular, SOBC schemes were found to induce excessive risk taking in the banking industry. Chen *et al*. (2006) argue that inducing an excessive risk taking is one of the unique influences of using stock option compensations in the banking industry. Stockholders usually seek to transfer wealth from bondholders by increasing the risk of the firm. Within the banking sector, Saunders et al. (1990) argue that since depositors cannot effectively monitor shareholders' actions, they are susceptible to this wealth

transfer effect. Thus, shareholders can increase the value of their equity by increasing bank risk. SOBC represents a chance for managers and executives to increase their future stock ownership and ultimately their wealth. As the use of SOBC schemes substantially increases in the banking sector, managers and executives have the same incentives as stockholders to pursue strategies that increase bank risk. As such, recent calls to monitor banks' use of SOBC due to their tendency to induce risk taking incentives have attracted a great deal of attention (Mehran and Rosenberg, 2009). Walker (2009), for example, reviewed corporate governance in UK banks, and pointed out that their culture of granting SOBC incentives is viewed as excessive and it significantly induces short-term risk taking. In the US, the Congressional Emergency Economic Stabilization Act was established in 2008 to limit financial institutions tendency to offer SOBC incentives to reduce the probability of "unnecessary and excessive risks" that threaten their equity values. Based on the above discussion, the following sixth tested hypothesis is:

> *H*6: The intangible feature of the recognised expense of SOBC is more pronounced in high risk-taking banks.

Finally, to extend the limited boundary of the earlier highlighted banks characteristics that impact how market participants perceive the recognised SOBC expense, the chapter examines whether the effect of these factors prevails across all the sample contexts that adopted this international standards IFRS2/FAS123R. The majority of the available evidence regarding the effect of firms characteristics on the information content of expensing SOBC is drawn from US research focus (Rees and Stott, 2001; Aboody *et al*., 2004a,b; Chen *et al.*, 2006) or from a similar context such as Canada (Niu and Xu, 2009). The inferences are, therefore, more likely to be apparent across countries characterised by high level of investor protection and higher demand for disclosure. Based on this argument, the seventh tested hypothesis is:

H7: The effect of the firms' characteristics (size, growth opportunity and risk-taking) on pricing the recognised amount of SOBC is more pronounced in markets characterised by relatively high levels of investor protection.

3.5 Summary

The aim of the chapter was to review the extant related studies on the economic consequences of expensing SOBC, and on the information content and the value relevance of the mandatory expensing of the estimated fair value of SOBC. More specifically, the first section of this chapter reviewed the existing literature that used pre and post adoption data to estimate the negative impact of the mandatory adoption of expensing SOBC on companies' key financial indicators. The analysis distinguishes further between US and non-US studies. These distinctions were made to highlight that lack of international and post adoption studies on the effect of IFRS2/FAS123R given that the effect may differ across countries according to their institutional contexts.

The second section of this chapter reviewed the existing literature that examined the information content and the value relevance of expensing SOBC under the disclosure approach against that under the recognition approach. The analysis also highlights that given the mandatory adoption of two highly converged standards IFRS2 and FAS123R, this stream of literature focuses solely on a single context study. It also generally assumes that the value relevance of disclosed versus recognised information is the same across firms and that recognition of previously disclosed accounting items affects all the firms homogenously. However, the extent to which users of financial reports understand disclosed versus recognised information may differ across firms that operate in different institutional contexts. Finally, this section further developed the related research's theoretical framework and the hypotheses that are used to operationalize the standard setters' qualitative characteristics of the relevance and reliability of the disclosed versus

the recognised expense of SOBC on an international basis and taking into account reporting differences between various institutional settings.

Overall, most of the existing studies on the economic consequences of expensing SOBC, and on the usefulness and the information content of the mandatory expensing of the estimated fair value of SOBC relate to a single context, the US. However, studies on the IFRS and specifically, on a wider international scale, do not exist. Taking advantage of this gap in the literature, the aim of this thesis is to provide further evidence on the economic consequences of expensing SOBC, and on the usefulness and the information content of the disclosure versus recognition approach to the estimated fair value of SOBC under SFAS123R and IFRS2.

Chapter 4: Research methodology and design

4.1. Introduction

Research methodology is a key aspect that needs to be established in any research seeking to constitute knowledge claims and demystify social processes. It refers to, logically justifies, and directs the overall approach of the conducted research, and eventually enhances the chances to obtain valid findings and inferences (Kothari, 2004). Blessing and Chakrabarti, (2009) claim that choosing the appropriate methodology from the available alternatives is a primary step that ultimately constitutes the procedural framework within which the research is conducted systematically and scientifically. This chapter aims to develop a relevant methodological framework that underpins the research inquiries of this thesis. The thesis aims to examine the financial reporting implications of the mandatory adoption of IFRS2/FAS123R, in particular by analysing the interrelation between expensing SOBC and each of market and accounting variables, across various financial reporting contexts, and over an extended period of investigation. It is believed that the selected methodology for this thesis would help in realising "a better planned and smoother research process" (Blessing and Chakrabarti, 2009, p.13). The first section of this chapter briefly discusses the research paradigm and its main components. The next section of this chapter demonstrates the relevance of the selected research paradigm and the methodological choices on which the research design will be built. The third section discusses the research design and methods selected to answer each of the research questions of the current thesis. The fourth section of this chapter provides a self-reflection on the selected methodological choices for this thesis to address its few potential limitations and how they are addressed. The last section concludes.

4.2 Research paradigm

Each research question faces a choice of the research paradigm that is believed to have its influence over the strategy and methods used to conduct and answer this question (Saunders *et al*., 2009). A paradigm is a very wide concept composed of not only theories but also assumptions, methods, instruments, principles, standards, values and even instincts. It is a framework that fundamentally governs how a researcher perceives, thinks and acts, and ultimately the position taken regarding the subject of the research. Although there is no established convention for the definition of the paradigm, the more cited one which most authors would probably consent to is that of Thomas Kuhn (1996, p. 175). He defines the paradigm as "one sort of element in that constellation, the concrete puzzle-solutions, which, employed as models or examples, can replace explicit rules as a basis for the solution of the remaining puzzles of normal science". In this sense, the paradigm is seen as underlying assumptions and intellectual structure that constitute the key corners for research and development in any field of study. Burrell and Morgan (1979, p.24) maintain that "to be located in a particular paradigm is to view the world in a particular way". As such, the paradigm provides a conceptual framework for viewing and making sense of the social world.

The term "paradigm" is usually identified in social and organizational theories through a combination of philosophy of science, logic of inquiry, and the methods and techniques (Burrell and Morgan, 1979; Hallebone and Priest, 2009). Saunders *et al*. (2009) define the philosophy of science (the research philosophy) as essential sets of assumptions that influence the way under which researchers recognise the world and the way how it works. These assumptions are independent, and used to distinguish among different types of social science research paradigms (Burrell and Morgan, 1979; Saunders *et al*., 2009; Hallebone and Priest, 2009). Burrell and Morgan (1979, viii) claim that these 'meta-

theoretical assumptions' are concerned with 'the nature of social science and the nature of society' respectively.

The first set of these assumptions which underpins the nature of social science involves ontology, epistemology, human nature, and methodology (Burrell and Morgan, 1979). Ontology is concerned with the very essence of reality, is it given or a product of the mind? Conceived or perceived by one's mind? Epistemology is concerned with the grounds of knowledge, how we know it and how it can be transmitted to other people; whether knowledge is something which can be acquired or is something which has to be personally experienced? It defines the way knowledge about a particular view or reality is generated, represented, understood, and used. Human nature is concerned with the relationship between humans and their environment, determinism versus voluntarism. Are humans determined by their environment, or do they have 'free will' to create their environment? Finally, methodology refers to the process of investigating and obtaining the knowledge about the social world. This set of assumptions which is described by (Burrell and Morgan, p.4) as 'the subjective-objective dimension', has been identified as pertinent to understanding social science. Furthermore, these assumptions are consequential to each other. The view of ontology affects the selected epistemological persuasion which, in turn, affects the view of human nature. The choice of methodology also logically follows the assumptions a researcher has already made.

The second set of assumptions, which is described by (Burrell and Morgan, p.16) as the 'regulation and radical change dimension', relates to the nature of society. This set involves both "regulation" (concerning the explanation about the unity and cohesiveness of society) and "radical change" (concerning with explaining the social conflict, the need for the emancipation from development' burdens and the seeking for better alternatives rather than acceptance the *status quo*) (*ibid.*, p.17).

The relationship between these two key dimensions has identified various contiguous but mutually exclusive paradigms. Positivist, interpretive, and critical are the most three important and prevailing paradigms noticeably constructing social and organizational research (Hopper and Powell, 1985). Burrell and Morgan (1979, p.23) define these paradigms as "very basic meta-theoretical assumptions, which underwrite the frame of reference, mode of theorising and modus operandi of the social theorists who operate within them". These paradigms aim at helping researchers to identify their assumptions about their view of the nature of science and of society; to offer a useful way of understanding other researchers' approaches; and to help them on their own route to understand where it is possible to go and where they are going (See Saunders *et al.*, 2009). While producing competing modes of inquiry, these philosophies take distinctively different ontological and epistemological positions regarding theoretical foundations, assumptions, and purposes (Kim, 2003).

The positivistic approach is built on the claim that there is a world of objective reality that exists independently of human beings and that has a determinate nature or essence that is knowable (Chua, 1986). The distinction between the subject and the object is very closely allied with positivists' belief about realism. Positivists believe that what is "out there" an object is presumed to be independent of the knower (subject). Positivists also believe that knowledge is achieved when a subject correctly mirrors and "discovers" this objective reality. As such this approach often seeks to identify measure and evaluate any phenomena and to provide a rational explanation for it. This explanation will attempt to establish links and relationships between the different elements of the subject and relate them to a particular theory or practice.

The interpretive approach is concerned with understanding the world as it is, to understand the fundamental nature of the social world at the level of subjective

experience (Burrell and Morgan, 1979). It provides explanation within the realm of individual consciousness and subjectivity. The interpretive approach emphasises essentially the subjective nature of the social world and attempts to understand it primarily from the frame of reference of those being studied (Hopper and Powell, 1985). The ontology of the interpretive approach assumes that reality is created by continues humans interactions. As such, norms and meanings become objectively (intersubjective) real, and eventually form a given comprehensive social reality (Chua, 1986). A theory in this sense attempts only to explain action and to understand how the given social order is produced and reproduced. Scientific explanations of human intention are sought through different means such as case studies, and participant observation in their everyday life. The criteria of logical consistency, subjective interpretation, and agreement with actor' common-sense interpretations are also used to assess the adequacy of the scientific explanations *(ibid.)*. Finally, as opposed to positivism, the interpretive approach is more qualitative and based on interpreting reality through people's thoughts and purposes (Lee, 1991).

Both positive and interpretive theory do not seek to provide a social critique or promote radical change. As such critical theory emerged as a brand of social philosophy that attempts to do so and to operate simultaneously at a philosophical, theoretical and practical level (Burrell and Morgan, 1979). It started as an intellectual movement which sought to critique the effects of society and technology on human development (Easterby-Smith el al, 2008). Critical researchers aim at revealing the domination within studied society by criticizing its various phenomena. In terms of ontology, critical philosophers believe that social reality is both subjectively created and objectively real (Chua 1986). Reality as a whole as well as each particular part is understood as developing out of an earlier stage of its existence and evolving into something else. In term on epistemology,

critical philosophers accept that the criteria for judging the adequacy of theories and scientific explanations are temporal and context-bound. Chua (1986, p.620) claim that "the truth is very much in the process of being hammered out and is grounded in social and historical practice". Therefore, there is no theory-independent fact that can conclusively prove or disprove a theory. In terms of methodology, neither does critical theory utilise statistical models, nor does it use quantitative methods in analyzing and collecting research data. Instead, historical, ethnographic research and case studies are more commonly used. It emphasises detailed long-term historical analysis explanations and ethnographic studies of organizational structures and processes that show their societal linkage (*ibid.*). The focus on the historical analysis serves as the critical function of exposing rigidities and apparently ahistorical relations that restrict human potentialities.

The second part of the paradigm is the logic of inquiry. Hallebone and Priest (2009: 27) defines the logic of inquiry as "the major form of reasoning to be used in answering the research question with the use of empirical data, and the particular logics on which such reasoning is to be based". That is, the logic of inquiries identifies the way under which a researcher looks for answers to the research question. The induction, deduction, or the mix of both are the common used logic of reasoning on which to base arguing for and answering the research question. The inductive approach is a formulation of general theories from specific observations, as opposed to the deductive approach, which is the derivation of a new logical truth from existing facts (Saunders *et al.*, 2009). In more detail, the deductive approach derives logical results from prior theories, states them in hypothesis structure, examines them in an empirical data, and after that presents the finals findings based on verification or falsification from stated hypothesis (Blaikie, 2010). By contrast, in the inductive approach, observations about the world results in emerging

propositions which are generalized in a theoretical form. The combination of both inductive and deductive approaches is usually referred to as the abduction approach (Svennevig, 2001). It can be viewed as a reciprocal action between theory and empiricism in order to acquire a complete picture of what is researched.

Finally, Bryman and Bell (2007) point out that the role of the research logic of inquiry is to link the philosophy of science and research method. The research method is "a set of tactics and supporting steps that operationalise the chosen philosophy of science and logic of inquiry" (Hallebone and Priest, 2009: 28). It includes the sample, data collection and analysis. The next section discuss the relevance of the selected research approach, logical reasoning and methods to the nature of inquires raised in this thesis.

4.3 The research paradigm and methodological choices of the thesis

4.3.1 Positivist approach

Positivism in social science started in the United States by the French philosopher "Auguste Comte" in 1853 (Easterby-Smith *et al.*, 2008). It became the dominant research approach during the (1960s and 1970s) as there has been increasing demand for 'objective' research that emphasizes the principal of empirical certainty (Neuman, 2003, p.82). Auguste Comte sought to introduce a balanced mix of rationalism and empiricism, by constructing a new method allowing for "absolute descriptions of the empirical world to be made distinct from any observer bias and clearly separated from any attitude concerning the need for change in the observable referent" (Laughlin, 1995, p.73). Positivist philosophy is built on many assumptions. Chua (1986) claims that the positivism is dominated by a belief that there is a world of objective reality which exists independently of human beings. That is, the world is external and objective and people do not have any influence on the social reality. The role of the positivist researcher is to

discover these general laws that affect human life. These laws can be manipulated to predict the future as well as to improve human relations (Neuman, 2003; Willis, 2007). Additionally, positivist philosophy assumes that people respond to external factors in systematic ways where researchers seek to understand these responses without concern about the internal forces that drive them (Neuman, 2003). This assumption is the positivist basis of the cause-effect relationship between variables. According to Saunders *et al*. (2009), positivism is based on observable reality, which is grounded in facts rather than impressions in order to drive generalizable laws and causal relationships. Positivists often start from observations and existing theory to draw a hypothesis to be tested. As such results of the test will either support or refute the selected theory. Eventually, a set of theories that can be retested by other researchers will be developed. In short, the positivist ontology of positivism sees reality as existing independently from and outside human existence, while positivist epistemology looks at observable events in order to obtain the data necessary to form general laws that are based on cause-effect relationships.

In this context, there are many advantages and disadvantages to adopt the positive approach to examine and analyse the interrelation between the disclosure versus the recognition approach to expensing the fair value of SOBC, and each of market and accounting selected variables, across various financial reporting settings, and over two consequent periods of investigation (pre versus post). In terms of advantages that positivist approach may have, the assumption that reality already exists out there and can be noticed and observed from objective viewpoint increases the possibility of researcher neutrality or independence. Following such an approach will result in a relatively low intervention with the phenomena being studied. As such, compared with other approaches, objectivity and independence are considered to be the main attractive

features of positivist research (Rayan *et al*., 1992; Saunders *et al*., 2009). Another key characteristic of positivism is the dependence on highly structured methodologies in conducting research which helps in replicating the study and testing its results in future research (Saunders *et al*., 2009). That is, scientific explanations of the studied phenomena or of the cause-effect relationship should be replicated to ensure that the created knowledge is true. Neuman (2003: 74) claims that "positivists see science as a special, distinctive part of society that is free of personal, political, or religious values". Indeed, the objectivity, neutrality and the scientific nature of the highly structured methodologies make positivist research closer to natural science (Saunders *et al*., 2009).

Some, however, may argue that the social science researcher should aim to understand the perception of phenomena rather than considering people as objects. Chua (1986), for example, lists three criticisms of positive accounting research: 1) positivist accounting researchers do not study an institutional structure, which could be considered a biased position of researcher; 2) researchers neglect that organisation could be a reflexive of conflicts between different groups having different interests; and 3) positivist accounting research usually does not pay attention to the controversies within the philosophy of science which have questioned the realism and testability of theories by empirical data.

Despite these criticisms attributed to positivism, there are many factors encouraging the current thesis to adopt the positivist approach in answering the research questions. First of all, the researcher believes that reality exists outside of the individuals. As such, the best way to acquire knowledge about reality is by observing it in a way that is independent, effectively structured and consistent with the research objective. The main objective of this thesis is to identify and highlight the major financial reporting implications of alternative reporting methods of accounting for SOBC using pre and

extended post IFRS2/FAS123R adoption period and across wider global settings, the EU and US banking sectors.

This influence can be measured and observed through the interrelation between the disclosed versus the recognised fair-value expense of SOBC, and each of market and accounting selected variables, across various financial reporting settings, and over two consequent periods of investigation. In other words, as the research question is concerned with the possibility of the differences in the financial reporting implications across banks that operate in various financial reporting settings prior and after the mandatory adoption of IFRS2/FAS123R, the thesis seeks to quantify this relationship based on accounting and market measures rather than on belief.

In addition, the study emphasises the importance of the researcher's objectivity to enable replication and predictions as well as comparison with previous studies. Specifically, the growing body of literature about the mandatory adoption of the recognition approach to expensing SOBC has adopted a quantitative positivist approach. It is believed that measurement is the strong point of quantitative research. Its advantages bring dependency and consistency to the carried out research which is influenced neither by the timing of its administration nor by the person who administers it. Furthermore, conducting quantitative research focusing on the impact of expensing SOBC on banks' financial indicators, along with highlighting the relevance and reliability of the disclosure versus the recognition regime under IFRS2/FAS123R, and on a wider global context is necessary to allow comparison with previous results, which were mainly concerned with a single market. In summary, the use of quantitative data allows for a structured methodology, which increases the ability to replicate and to generalise the findings and, consequently, to compare them with those of other studies. Finally, the time and cost constraints of this study encourage the implementation of quantitative positivist research.

In this context, the positivist approach is considered less time and cost consuming than other paradigms which usually demand the collection of primary data regarding the phenomena being studied.

4.3.2 Deductive reasoning

This thesis adopts deductive logic to highlight the financial reporting implications of expensing SOBC across banks that operate in various financial reporting settings prior and after the mandatory adoption of IFRS2/FAS123R. The adoption of the deductive logic in this thesis conforms to the approach used by growing body of studies conducted in the same field (see for instance Rees and Stott, 2001; Li, 2003; Aboody *et al.*, 2004a; Niu and Xu, 2009). Many researchers believe that deductive reasoning is consistent with positivism (See Saunders *et al*., 2009). Chua (1986: 608) supports this belief, contending that "[T]he use of the hypothetico-deductive model of scientific explanation is the most consistent characteristic of extant accounting research".

Deductive reasoning starts from a general theory or universal law to draw a hypothesis or hypotheses that could be tested by analysing the observations. Based on the results of examining the validity of the hypothesis or hypotheses, the validity of the original theory is determined (Welman *et al*., 2005). This logical approach seeks mainly to investigate universal laws or principles from which lower-level hypotheses may be deduced (Chua, 1986). Hypotheses are usually drawn to explain a phenomenon based on causal relationships between two or more variables. As the researcher starts from a general law to deduce the hypotheses, the variables are well-defined, which makes this a powerful approach.

Additionally, deductive reasoning, which is based on structured methodologies, allows the control of testing hypotheses to ensure that the variance in dependent variables are

caused by changes in the independent variables not by any other variable. Another main feature of deductive logic in accounting research is that it generally depends on the empirical testing of hypotheses. Finally, deductive studies, by identifying the reasons of a certain phenomenon, can predict the behavior in future and consequently give the advantages to manipulate these reasons to achieve the required changes. The above illustration shows how the deductive approach is consistent with positivist research. Therefore, the thesis is conducted based on deductive reasoning consistent with the positivist approach which is selected to underpin this research. This aspect is illustrated further below.

4.4 Research Design and Methods

The data used to answer these questions is numerical in nature. Therefore, the quantitative method is believed to be more relevant to the positive approach in general and hence to answer the given research questions. Quantitative methods of data analysis and collection are favored because these methods allow for replications and for generalizations to be made. They also allow the researcher to answer the research questions in an independent way. Quantitative methods relates to the collection and analysis of numerical data whereby results are collated, presented and tested statistically using scale, range, frequency etc. These include surveys, experimental studies and cross-sectional studies. The following two sections develop the empirical experiment and model used in this thesis. They also briefly discuss the selected statistical measurements and the sample selection for each of the thesis' two research questions.

4.4.1 Economic consequences of expensing SOBC

The first research question aims to identify, analyse, compare, and evaluate the total effect of the mandatory adoption of IFRS2 and FAS123R, on selected performance

measures within and between two distinct settings: the US and EU banking sectors using pre and post-adoption data. This question is relatively more descriptive and analytical in nature. Descriptive research is usually used to identify and classify elements or characteristics of the subject. Analytical research often extends the descriptive approach to suggest or explain why or how something is happening. The effect of the IFRS2/FAS123R on the selected performance indicators is assessed by utilising both traditional materiality thresholds, used by earlier literature, and statistical tests. Differentiating between statistical and practical significance is a matter of importance such that small numerical differences measured in percentage terms can be regarded as statistically significant. All performance measures utilised in earlier studies, [ROE] (Chalmers and Godfrey, 2005), [ROA, Diluted EPS] (Botosan and Plumlee, 2001), [SOBC expense relative to opening shareholders' equity] (Street and Cereola, 2004), [profit (loss) before tax] (Schroeder and Schauer, 2008) in addition to a widely used performance measure in banking industry (cost to income ratio [CIR]), have been employed in this research.

All selected performance measures are calculated with and without SOBC expense. The effect in percentage terms on the selected performance indicators is calculated as follows: ratios adjusted for SOBC expense minus reported ratio and the difference is divided by the reported ratio. In some cases, observations in a case of banks reported losses over the sample period under examination have been omitted. Chalmers and Godfrey (2005) and Shiwakoti and Rutherford (2010) also follow the same methodology. The reason is being that such losses result in nonsensical percentages owing to the negative denominators. This follows Barber and Lyon (1996, p 394) who commented that:

> '...if ROA is negative in either year over which the percentage change is calculated, the results is nonsensical. Consequently, researchers are forced to discard firms that experience losses over the sample period under consideration'.

Utilising an appropriate 'cut-off' for testing the traditional materiality threshold is a subjective undertaking and ranging from approximately 0.5% to 50% (Vance, 2011). Pattillo (1976) reported that in practice a "rule of thumb" of 5 to10 percent of net income is commonly used as a materiality criterion (cited in Botosan and Plumlee, 2001). Therefore, and following earlier literature, the 5% materiality thresholds is applied to assess the impact on ROA, ROE, DEPS, while the 0.5% materiality level is applied in respect to opening shareholders' equity. A 1% materiality threshold will be employed to assess the materiality of the impact on cost to income ratio.

To investigate the significance of the effect of IFRS2/FAS123R on the selected performance measures statistically, and whether the median and the mean of this effect significantly varies between EU and US banks and within each block separately, a non-parametric Wilcoxon-Mann-Whitney (U) test/Wilcoxon signed-rank test are used along with their comparable parametric T test for robustness check. A set of control variables is used to complement the analysis after controlling for the possible difference in some banks' characteristics and operational structure within and between the EU and US banks. Kruskal–Wallis test along with one-way analysis of variance (ANOVA) for robustness check are used to examine the effect of IFRS2/FAS123R on the selected performance measures within each sample after controlling for banks' characteristics. As an additional analysis, the findings are also reported after controlling for the difference in institutional environment under which the sample-banks operate. All figures are reported in US currency ($) using the exchange rate at each closing period.

4.4.1.1 Sampling and data collection

The data set related to the expense of SOBC in EU and US commercial banking sectors is hand-collected from published annual reports of their listed Commercial Banks (CBs)

and Bank-holding Companies (BHCs)[1]. CBs and BHCs are the mainly dominant structure of commercial banking industry in both sides of the Atlantic (Avraham, *et al*., 2012; ECB, 2013). The distinction between CBs and BHCs is expected to further enhance the analysis of the effect of IFRS2/FAS123R adoption in the banking sector given that the first inquiry of this thesis is relatively more descriptive and analytical in nature. The *BankScope* database[2] is used to identify banks classification into CBs and BHCs. The other data related to the selected performance indicators and the controls variables are withdrawn from the DataStream (Thomson Reuters) database[3]. Furthermore, to exclude BHCs that are mainly engaged in non-banking activities, banks should have more than 25% net loan to total assets in average over the studied period. Banks included in the data set are also required to satisfy a number of criteria. Firstly, to avoid any systematic bias in interpreting trends in levels of expensing SOBC, and to ensure stabilising the expense, banks should have incorporated the expensing of SOBC in their annual reports for at least three years over the studied period.

Table (1) summarises the final sample of 145 banks (1,010 bank-year observations) selected for this research question that is tested in chapter five. Banks included in the data set are also required to satisfy a number of criteria. Firstly, to avoid any systematic bias in interpreting trends in levels of expensing SOBC, and to ensure stabilising the expense, banks should have incorporated the expensing of SOBC in their annual reports for at least three years over the studied period. SOBC usually need three years to complete their

[1] BHC is simply a corporation that owns, or has controlling interest in, one or more banks. BHC usually owns a number of domestic bank subsidiaries engaged in lending, deposit-taking, and other activities, as well as nonbanking and foreign subsidiaries engaged in a broader range of business activities, which may include securities dealing and underwriting, insurance, real estate, private equity, leasing and trust services, asset management, and so on. By contrast, a CB is a financial institution that is owned by stockholders. CB mainly operates for a profit by engaging in various lending activities.

[2] *BankScope* database by the Bureau van Dijk, a major publisher of company information and business intelligence, includes data on 30,000 banks world-wide.

[3] Datastream is a global financial and macroeconomic database covering equities, stock market indices, currencies, fixed income securities and key economic indicators for 175 countries and 60 markets.

cycle and to stabilise in banks that grant SOBC on a yearly or a longer basis whether in a steady or unsteady level.

Table 1: Sample selection, countries and observations for the economic consequences of expensing SOBC.

Panel A: Sample selection

Description	US		EU	
	Commercial	BHCs	Commercial	BHCs
Initial Sample	20	90	58	28
Banks that do not publish annual reports in English	0	0	5	0
Banks with missing accounting data and market valuations	1	0	1	0
Banks that do not report SOBC expense over 3 years	4	0	22	1
BHCs with less than 25% net loan to total assets	0	3	0	14
The final sample	15	87	30	13

Panel B: Countries and observations in the final sample

Country	Commercial	BHCs	Total Banks	Years-observations
US	15	87	102	702
EU	30	13	43	308
UNITED KINGDOM	0	5	5	40
ITALY	6	0	6	45
GERMANY	4	0	4	27
GREECE	4	0	4	19
SPAIN	4	0	4	22
FRANCE	3	0	3	24
NETHERLANDS	1	2	3	24
AUSTRIA	1	1	2	16
BELGIUM	0	2	2	15
DENMARK	2	0	2	15
IRELAND	2	0	2	13
PORTUGAL	1	1	2	16
SWEDEN	1	1	2	16
LUXEMBOURG	0	1	1	8
FINLAND	1	0	1	8
Total	45	100	145	1010

Secondly, for EU listed banks, they should also have published annual reports in the English language for years between 2004 and 2011[4]. Thirdly, banks should have no missing data in any of the accounting statements or market valuations. The EU sample consists of 43 banks (13 bank holding companies and 30 commercial banks) out of 86 banks that operate in 15 EU countries during the studied period. Finally, for US banks, the data is drawn from two segments. The first one includes 88 banks (87 bank holding companies and 1 commercial bank) out of 91 that entered the 2011 S&P Composite 1500 which includes three leading indices, the S&P 500, the S&P MidCap 400, and the S&P SmallCap 600**.** The limited number of US commercial banks in this segment of the

[4] IFRS2 requires that all equity-settled payments awarded after 7th November 2002 and vested after the effective date of IFRS2 should be accounted for using the fair value method; therefore data concerning shares granted after 7th November 2002 as well as not vested at the beginning of 2005 were collected as well.

sample necessitates the need for a second segment that includes 14 commercial banks out of 19 banks that use options for at least three years over the studied period, and have average total assets over $500 million during the studied period[5].

4.4.2 The value relevance and the information content of the recognition versus the disclosure approach for expensing the fair value of SOBC

The second research question that is tested in chapter six aims to investigate the value relevance and the information content of the recognition versus the disclosure approach for expensing the fair value of SOBC using a wider international setting. It also highlights the magnitude of the perceived reliability of the adopted accounting treatment and measurement to the cost associated with SOBC grants compared to their intangible effect (as value increasing assets) by market participants, and across different institutional settings. The financial implication of disclosure versus recognition approach to the cost associated with SOBC may differ from one setting to another due to the variation in the country-specific institutional differences, such as the level of investor protection. The majority of previous studies that investigated the value relevance and reliability of the disclosure approach to expensing SOBC against the recognition approach, mainly adopted the empirical accounting-based valuation model developed by Ohlson (1995). This model is based on the idea that accounting information is considered value relevant when it has a statistical association with equity market value or return (Barth el al., 2001). The model, in the spirit of the level specification, relates balance sheet amounts to the market value of the firm (e,g., Aboody *et al*., 2004a) or, in the spirit of a changes

[5] Setting the threshold of $500 million in average total assets for US commercial banks is based on four main reasons: 1) to ensure that the size of selected commercial banks fall over the $500 m threshold of U.S. BHCs that are required to fill the FR Y-9C report, the most widely requested and reviewed report at the holding company level. 2) to be in the same range with the smallest total average assets of EU banks; 3) to avoid including smaller banks in the final sample which might have a material impact on the final results; 4) annual reports of selected banks are more likely to provide data for this research.

specification, stock returns to the (deflated) levels and changes in earnings (e,g Niu and Xu, 2009).

Using the pooled cross-section and time-series regression analysis is an inalienable instrument for the development of the comparative studies. Using a pooled cross-section and time-series regression of firm/year observations for all countries allows for formal tests of differences among countries or other used classifications (Ball *et al.*, 2000). Such that implies that results interpretation for the main model is based on the assumption that price formation is roughly the same across countries. Holthausen and Watts (2001) argue that researchers should exclusively opt for the returns model. Coefficients of the level market value model may be biased due to size effects, omitted variables, measurement errors, and cross-sectional differences in valuation parameters (Easton and Sommers, 2003). Moreover, standard errors might be biased due to heteroskedasticity[6] (White, 1980; Brown *et al*., 1999). The changes model, however, addresses the potential bias in coefficients numbers of the level-based model caused by the potential omission of unobserved variables (Kothary and Zimmerman, 1995). The level model will be exposed to a higher potential bias given the number of unobserved variables is expected to be higher in a sample that includes banks which operate in various institutional contexts. Therefore, as a base model, Ohlson's model (1995) on the spirit of a changes specification is adopted.

$$R_{it} = \alpha_0 + \alpha_1 NI_{it} + \alpha_2 \Delta NI_{it} + e_{it} \quad (1)$$

R_{it}:The annual buy-and-hold stock returns inclusive of dividends and computed after three month of a bank's fiscal year-end[7]. The analysis is also repeated using the annual buy-and-hold stock returns exclusive of dividends as a robustness check in all used models.

[6] Heteroskedasticity arises most often with cross-sectional data, and it refers to a situation under which the variance of the error terms differs across observations.

[7] The reason for choosing the window of three months is justified in Veith and Werner (2014, 307) who states that 'An obvious choice would be the fiscal year, but annual financial reports will not be available at FYE, and thus cannot immediately be reflected insecurity prices at that date. Moreover, it will take some time until capital markets have fully processed the accounting information after publication. Addressing both problems, researchers tend to shift or extend the yearly return window so that it ends at some predefined point after FYE'. Barth *et al*. (2008), Aboody *et al.* (2004a)

NI_{it}: Net incomes before extraordinary items per share over the fiscal year.

$\Delta\ NI_{it}$: The year-to-year change in earnings per share.

e_{it}: Error term.

i, and t refer to banks and years respectively

The change model initially correlates annual stock returns to the (deflated) components of net earnings. Ohlson (1995), Feltham and Ohlson (1995) and Francis *et al*. (2004) suggest that earnings growth might also have an impact on the value of firms. Therefore, earnings growth is used as a control variable to the relationship between components of net earnings and stock returns. Furthermore, following the approach of other studies (e.g. Aboody *et al*., 2004a; Niu and Xu, 2009; Schiemann and Guenther, 2013), SOBC expense is separated from the rest of net earnings' components as to examine their main impact is the main concern for this study.

$$R_{it} = \alpha_0 + \alpha_1 NI_{it} + \alpha_2 \Delta NI_{it} + \alpha_3 SOBC_{it} + e_{it} \quad (2)$$

R_{it}:The annual buy-and-hold stock returns inclusive of dividends and computed after three month of a bank's fiscal year-end.

NI_{it}: Net incomes before extraordinary items per share over the fiscal year adjusted for the recognised share-based compensation expenses per share.

$SOBC_{it}$: refers to the voluntarily or mandatorily recognised share-option based compensations expense per share.

$\Delta\ NI_{it}$: The year-to-year change in net incomes.

e_{it}: Error term.

i, and t refer to banks and years respectively

The pooled cross-section and time-series regression is run using the Ordinary Least Squares (OLS) method. The misspecification, that is peculiar of pooled data, is the assumption of homogeneity of level of dependent variable across units and times. To address this issue, the vast value relevance literature uses Ohlson's model per share amounts to reduce the presence of size-related heteroscedastic disturbances (Barth *et al*., 1992). In addition, all regressions are based on robust standard errors using White-adjusted t-statistics. To take into consideration the year and country effect that is not

and Niu and Xu (2009), for example, opt for 12-month return windows ending three months after financial year end. Therefore, the most common return window has been used that seems to be a 15-month window ending three months after FYE.

captured by the dependent variables, the used models allow the intercept to vary across years and countries. A set of continuous and dummy country-level institutional variables is also used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) [LT] a country's legal tradition, common law versus code law, based on La Porta *et al*. (1997) and Ball *et al*. (2000); (2) the US economy versus the remaining countries, (3) [ASD] the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules in the selected sample-countries; (5) [SOIP]: The average of the strength of shareholders protection in a given country from World Economic Forum over the period of (2008-2011). Finally, all raw values are translated into US$ using the respective exchange rate at the end of the fiscal year. The three main research designs (i.e., Pre IFRS2/FAS123R analysis, pre- versus post-IFRS2/FAS123R analysis and post-IFRS2/FAS123R analysis), and the sample of selected banks used to investigate the value relevance and the information content of the disclosure versus the recognition approach to SOBC are discussed in the next sub sections.

4.4.2.1 Pre- IFRS2/FAS123R analysis

Equation (3) tests the information content of both the disclosure approach to expensing SOBC and the voluntary recognition approach, using both pre IFRS2 and FAS123R adoption periods.

$$R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1\, NI_{it} + \alpha_2\Delta\, NI_{it} + \alpha_3 Rec_{it} + \alpha_4 Dis_{it} + \alpha_5 Inv\_prot_{jt} + \alpha_6 Dis_{it}\ x\ Inv\_prot_{jt} + e_{it} \ldots\ldots\ldots\ldots (3)$$

R_{it}:The twelve months buy-and-hold stock returns inclusive of dividends ending three months after the bank's fiscal year-end.

NI_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year adjusted for the voluntarily recognised share-based compensation expenses. Earnings per share are computed as total net income before extraordinary items divided by the number of common shares outstanding.

$\Delta\, NI_{it}$: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year.

Rec_{it}: The voluntarily recognised SOBC expense scaled by the stock price at the beginning of the fiscal year.

Dis_{it}: The disclosed SOBC expense scaled by the stock price at the beginning of the fiscal year.

e_{it}: Error term.

Inv_prot_{it}: A set of continuous and dummy country-level institutional variables used to proxy the level of investor protections(1) a country's legal tradition, common law versus code law (2) the US economy versus the remaining countries; (3) the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation; (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules in the selected sample-countries; (5) The average of the strength of shareholders protection in a given country from World Economic Forum.

t, j, and i refer to years, countries and banks respectively. $\sum\alpha_{02,i}C_j$ ：a dummy variables identify the country of the accounting standards used for each bank/year, $\sum\alpha_{01,i}Y_t$ ：a dummy variables identify the year.

The voluntarily recognised expense of SOBC is entered in this model as one of the earnings components. If banks did not voluntarily recognise any SOBC expense, a zero value is assigned. Furthermore, the disclosed expense of SOBC is entered into this model as a negative value (expense). This initial model will be run first. More complete estimates of equation 3, then, will be run to allow the coefficient of expensing SOBC under the disclosure approach to vary across the different selected proxies for the level of investors' protection under which sample-banks operate[8].

4.4.2.2 Pre versus post IFRS2/FAS123R analysis

The following model (4) allows the examination of the value-relevance and information content of SOBC, whose fair value is disclosed prior to the adoption of IFRS2/FAS123R and recognised subsequent to the adoption of IFRS2/FAS123R.

$$R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1 NI_{it} + \alpha_2 \Delta NI_{it} + \alpha_3 SOBC_{it} + \alpha_4 Post + \alpha_5(Post * SOBC_{it}) + \alpha_6 Inv\_prot_{it} + \alpha_7 (SOBC_{it} * Inv\_prot_{jt}) + \alpha_8(Post * Inv\_prot_{jt}) + \alpha_9(Post * SOBC_{it} * Inv\_prot_{jt}) + e_{it} \quad (4)$$

R_{it}:The twelve months' buy-and-hold stock returns inclusive of dividends ending three months after the bank's fiscal year-end.

NI_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year adjusted for the recognised SOBC expenses. Earnings per share are computed as total net income before extraordinary items divided by the number of common shares outstanding.

$\Delta\ NI_{it}$: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year.

[8] Over the pre-adoption period, only a few US banks selected expensing stock options under the voluntary recognition regime, Therefore, the coefficient on the expensing of stock options under the voluntary regime is not interacted with the proxies used to the level of investor protection under which the sample-banks operate.

$SOBC_{it}$: Share-option based compensations expenses scaled by the stock price at the beginning of the fiscal year. In the pre-IFRS2/FAS123R period, SOBC expense entered into the regression as a negative value (expense) if it is disclosed in the footnote.

Post: a dummy variable equal to (1) over the post-adoption period and equal to (0) over the pre-adoption period.

e_{it}: Error term.

Inv_prot_{it}: A set of continuous and dummy country-level institutional variables used to proxy the level of investor protections (1) a country's legal tradition, common law versus code law (2) the US economy versus the remaining countries; (3) the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation; (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules in the selected sample-countries; (5) The average of the strength of shareholders protection in a given country from World Economic Forum.

t, j, and i refer to years, countries and banks respectively. $\sum \alpha_{02,i} C_j$: a dummy variables identify the country of the accounting standards used for each bank/year, $\sum \alpha_{01,i} Y_t$: a dummy variables identify the year.

This model has two important considerations. Firstly, the model includes both recognised and disclosed expenses of SOBC as independent variables. It includes the disclosed expense of SOBC in the pre-IFRS2/FAS123R period entered into the regression as a negative value; otherwise it includes the recognised expense of SOBC in the pre and post-IFRS2/FAS123R period. Secondly, the coefficients on the explanatory variable $[SOBC_{it}]$ are permitted to differ across the IFRS2/FAS123R periods $[Post]$. Thirdly, the coefficient that tests the information content and the value relevance of expensing the fair value of SOBC in the post adoption period compared to that in the pre-adoption period $[(Post * SOBC_{it}]$ is permitted to differ across different levels of investor protection $[Inv\_prot_{jt}]$. The main coefficients of interest in these models are $[\alpha_5 (Post * SOBC_{it}]$, and $[\alpha_9 Post * SOBC_{it} * Inv\_prot_{jt}]$. Significance and signs of these coefficients indicate the value relevance and the information content of using the disclosure versus the recognition approach expensing the fair value of SOBC consequent to the mandatorily adoption of IFRS2/FAS123R, and the degree to which this inference changes in banks that operate across different institutional settings, respectively.

4.4.2.3 Post-IFRS2/FAS123R analysis

The following model (5) tests the influence of the variation in the institutional reporting settings on the magnitude of the information content and the value relevance of the recognised expense of SOBC after the adoption of IFRS2/FAS123R.

$$R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1\, NI_{it} + \alpha_2\Delta\, NI_{it} + \alpha_3 SOBC_{it} + \alpha_4\, Inv\_prot_{jt} + \alpha_5\, SOBC_{it} * Inv\_prot_{jt} + e_{it} \quad (5)$$

-R_{it}:The twelve months' buy-and-hold stock returns inclusive of dividends ending three months after the bank's fiscal year-end.

-NI_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year adjusted for the recognised SOBC expense. Earnings per share are computed as total net income before extraordinary items divided by the number of common shares outstanding.

-$\Delta\, NI_{it}$: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year.

-$SOBC_{it}$: Recognised share-option based compensations expenses scaled by the stock price at the beginning of the fiscal year.

e_{it}: Error term.

-Inv_prot_{it}: A set of continuous and dummy country-level institutional variables used to proxy the level of investor protections (1) a country's legal tradition, common law versus code law (2) the US economy versus the remaining countries; (3) the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation; (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules in the selected sample-countries; (5) The average of the strength of shareholders protection in a given country from World Economic Forum.

- t, j, and i refer to years, countries and banks respectively. $\sum\alpha_{02,i}C_j$: a dummy variables identify the country of the accounting standards used for each bank/year, $\sum\alpha_{01,i}Y_t$: a dummy variables identify the year.

The main coefficients of interest in this model are α_3 and α_5. The signs of these coefficients and their statistical significance show market valuation to the recognised expense of SOBC in a given context, and whether this inference significantly varies across banks that operate in different contexts.

4.4.2.4 The effects of characteristics of banks

The following model investigates whether selected banks' characteristics affect the information content and the value relevance of the recognised expense of SOBC consequent to the mandatorily adoption of IFRS2/FAS123R.

$$R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1 NI_{it} + \alpha_2\Delta\, NI_{it} + \alpha_3 SOBC_{it} + \alpha_4 Bank\_Charct + \alpha_5 SOBC_{it} * Bank\_Charct + \alpha_6\, Inv\_prot_{jt} + \alpha_7\, SBC_{it} * Inv\_prot_{it} + \alpha_8 Bank\_Charct * Inv\_prot_{jt} + \alpha_9 SOBC_{it} * Bank\_Charct * Inv\_prot_{jt} + e_{it} \quad (6)$$

-R_{it}:The twelve months' buy-and-hold stock returns inclusive of dividends ending three months after the bank's fiscal year-end.

-NI_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year adjusted for the recognised SOBC expenses. Earnings per share are computed as total net income before extraordinary items divided by the number of common shares outstanding.

-Δ NI_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year.

-$SOBC_{it}$: Recognised SOBC expenses scaled by the stock price at the beginning of the fiscal year.

e_{it}: Error term.

-$Bank\_Charct$:banks' size, banks potential growth rate and banks risk taking

-Inv_prot_{it}: A set of continuous and dummy country-level institutional variables used to proxy the level of investor protections (1) a country's legal tradition, common law versus code law (2) the US economy versus the remaining countries; (3) the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation; (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules in the selected sample-countries; (5) The average of the strength of shareholders protection in a given country from World Economic Forum.

- t, j, and i refer to years, countries and banks respectively. $\sum \alpha_{02,i} C_j$: a dummy variables identify the country of the accounting standards used for each bank/year, $\sum \alpha_{01,i} Y_t$: a dummy variables identify the year.

The coefficient on the recognised expense of SOBC in this equation is first allowed to vary according to each of banks' size, banks potential growth rate and banks risk taking. A complete estimate of Model (6), then highlights whether the effect of banks' characteristics is greater in banks operate within a context characterised by a higher level of investor protection such the US context, or it similarly prevails over all the sample settings.

Banks' size is measured by their market values, where it is =1 if average market value [total assets] of a bank> median of the sample market value [total assets], 0= otherwise) [the mean criterion is also used to partition banks' size as robustness check to the median criterion]. Banks' potential growth oppurtunity is represented by their market to book ratio where it is =1 if average [M/B] of a bank> median of the sample M/B ratio, 0= otherwise) [the mean criterion is also used to partition banks' potential growth as robustness check to the median criterion]. Finally, bank risk taking is measured by the market risk calculated using monthly volatility of bank stock price [daily and annual volatility are also used as a robustness check]. Bank risk taking is given the value = 1 if the average monthly volatility of stock prices in a given bank> median of the sample, 0= otherwise) [the mean criterion is also used to partition banks' risk as robustness check to the median criterion].

4.4.2.5 Sample selection and Data collection

Table 2: Sample selection, countries and observations for the value relevance and the information content of SOBC.

Table (2) summarises the final sample of 131 banks[9] (915 bank-year observations) selected for the second research question that is tested in chapter six. The selected sample of US and EU listed banks has to meet a number of selection criteria, to be included in the final sample. For the EU sample, all EU listed banks have been selected with the criteria to have published annual reports in English, over all the study period[10].

The US banks include the large-mid and small-cap banks that are listed in the 2011 S&P Composite 1500 that cover 90% of the market capitalization of U.S. stocks. All banks should report the fair value of SOBC at least for three years[11]. Meeting this criterion will capture the wider picture of investor valuation to the reported expense of SOBC over the option cycle life.

The reported expense of SOBC is manually collected from banks' annual reports. The pre- adoption data are collected from the comparative figures of 2005 for EU sample, and the pro forma disclosure for the US sample. Other markets and accounting data are extracted from DataStream. Banks should have all accounting and market numbers required for our study variables.

Furthermore, to exclude banks that are mainly engaged in non-banking activities, banks should have more than 25% net loan to total assets in average over the studied period. Finally, these selection procedure yields a final sample of 131 banks, of these, 43 EU banks.

[9] The number of US banks for the selected sample of the second research question (tested in chapter 6) is lower than that selected for the first research question (tested in chapter five) because the second research question uses a sample of US banks only listed in S&P 1500. Due to the descriptive nature of the first research question, a sample of US commercial banks that are not listed in S&P 1500 ~~were~~ was also added to it the overall sample.

[10] IFRS2 requires that all equity-settled payments awarded after 7th November 2002 and vested after the effective date of IFRS2 should be accounted for using the fair value method; therefore data concerning shares granted after 7th November 2002 as well as not vested at the beginning of 2005 were collected as well.

[11] Stock options usually need three years to complete their cycle and to stabilise in banks that grant options on a yearly or a longer basis whether in a steady or unsteady level.

Panel A: Sample selection

Description	US Banks	EU Banks
Initial Sample	91	86
Banks that do not publish annual reports in English	0	5
Banks with missing accounting data and market valuations	0	1
Banks that do not report SOBC expense over 3 years	0	23
BHCs with less than 25% net loan to total assets	3	14
The final sample	88	43
Panel B: Countries and observations in the final sample		
Country	Banks	Years-observations
US	88	609
EU	43	306
UNITED KINGDOM	5	40
ITALY	6	44
GERMANY	4	27
GREECE	4	19
SPAIN	4	22
FRANCE	3	24
NETHERLANDS	3	24
AUSTRIA	2	15
BELGIUM	2	15
DENMARK	2	15
IRELAND	2	13
PORTUGAL	2	16
SWEDEN	2	16
LUXEMBOURG	1	8
FINLAND	1	8
Total	131	915

4.5 Self-reflection on the selected methodological choices

The selected methodological choices for this thesis are subject to potential limitations. The methodology of the value relevance and information content of the disclosed versus the recognised expense of SOBC adopts the investor point of view as the objective of financial reporting. Financial reporting serves different objectives and users of financial statements beyond assisting investors in their equity investment decisions. Financial statements have a variety of applications such as those for the purpose of contracting and monitoring (Watts and Zimmerman, 1986) and for other social aspects. For example,

financial reporting, particularly accounting information such as ROA, ROE and EPS is used in identifying management compensation and debt contracts. The focus on the value relevance in one part of this thesis, is in no way diminishes the importance of the findings of this thesis to other users of financial statements.

In more detail, the first research question of this thesis mainly focuses on the materiality of the reduction in the reported earnings and other selected performance measures consequent to the mandatory adoption of IFRS2/FAS123. The materiality and the extent of the reduction in these accounting performance indicators are also a potential interest for users concerned with contracting and monitoring aspects of financial reporting. The selected performance indicators are one of the basic contracting aspects used in different contractual specifications such as variable compensation contracts and estimating the firm's value. Furthermore, the long-term reaction of both investors and managers to the mandatory expensing of SOBC may be of interest to users concerned with the motivational, structural and social aspects of SOBC contracts and other related corporate governance issues.

Secondly, the value relevance model of Ohson (1995) is criticized for being based on a linear, rather than nonlinear, valuation model (Holthausen and Watts, 2001). To alleviate the effect of linearity, the adopted value relevance model in this thesis incorporate potential effects of nonlinearities in the particular setting being examined. It permits coefficients on SOBC expense to vary cross-sectionally with different institutional settings and bank characteristics. As such, the adopted model relaxes the linearity assumption in a particular way, and maintains linearity within each partitioning. Furthermore, coefficients and the standard errors of the Ohlson (1995) model may be biased due to omitted variables and heteroskedasticity respectively (White, 1980; Brown *et al*., 1999). To addresses these issues given the international sample of this thesis, the

Ohlson's model (1995) on the spirit of a changes specification and using per share amounts along with robust standard errors using White-adjusted t-statistics is adopted in this thesis.

This thesis is also limited by the nature of the sample requirements. The sample only considers publicly listed US and EU banks. The homogeneity of banking sectors implies that a stronger set of controls can be used in this international study. However, the conclusion of this thesis may not be reflective of the situation that might prevail in some other sectors or other countries. As other countries and sectors adopted IFRS2 or its equivalent FAS123R, the opportunity to increase and diverse the sample still exist.

Lastly, this thesis covers the period from 2004 to 2011. One may argue that the results may be driven by the effect of 2008 financial crisis. To alleviate this possible bias in the reported findings, the thesis also controls for the effect of 2008 the financial crisis. The effect of the mandatory adoption of IFRS2/FAS123R on banks' selected measures is reported on a yearly basis. The change in the magnitude of the recognised expense of SOBC is also compared with and without the crisis period. The main analysis of the value relevance models are also run including and excluding the 2008 financial crisis period.

4.6 Summary

The aim of the chapter was to choose the relevant research paradigm and to develop the related methodological choices that underpin this thesis. The positive approach is adopted to examine and analyse the interrelation between the disclosure versus the recognition approach to expensing the estimated fair value of SOBC, and each of market and accounting selected variables, across various financial reporting settings, and over two consequent periods of investigation. The greater degree of objectivity, independence and the scientific nature of the highly structured methodologies make the positivist approach

more appropriate to answer the research questions of this thesis. Using the positivist approach to underpin this thesis also increases the ability to replicate and generalise the findings as well as compare them with previous studies. Furthermore, the time, cost, and access constraints of this study encourage the implementation of the quantitative positivist approach.

The thesis also adopts the deductive reasoning as the most consistent characteristic of the extant positive research conducted on this field (see for instance Rees and Stott, 2001; Li, 2003; Aboody *et al.*, 2004a; Niu and Xu, 2009). The quantitative methods are also believed to be more relevant to the positive approach in general and hence to answer the given research questions. The first research question that identifies and analyses, compares, and evaluates the impact of expensing SOBC on banks' financial indicators is tested using experimental designs which are standard research approaches in the existing literature (e.g. Botosan and Plumlee, 2001; Street and Cereola, 2004; Chalmers and Godfrey, 2005; Schroeder and Schauer, 2008; Shiwakoti and Rutherford, 2010). Both traditional materiality thresholds used by earlier literature, and statistical tests are mainly used to assess the effect on a sample of publicly listed EU and US banks over the period 2004-2011. The non-parametric Wilcoxon-Mann-Whitney (U) test/Wilcoxon signed-rank test will be used along with their comparable parametric T tests for robustness check to investigate the significance of the effect of IFRS2/FAS123R on the selected performance measures statistically, and whether this effect significantly varies between EU and US banks and within each block separately.

A set of control variables is used to complement the analysis after controlling for the possible difference in some banks' characteristics (banks' size and banks' growth opportunity), and operational structure (commercial banks and bank-holding companies) within and between the EU and US banks. Kruskal–Wallis test along with one-way

analysis of variance (ANOVA) for robustness check are used to examine the effect of IFRS2/FAS123R on the selected performance measures within each sample after controlling for banks' characteristics.

With respect to the value relevance and information content of the recognition versus the disclosure approach to the fair value of SOBC, the thesis utilises the return model of Ohlson (1996). This model is based on the idea that accounting information is considered value relevant and reliable when it has a statistical association with equity returns or market value (Barth el al., 2001). Furthermore, following Ball *et al*., (2000), the study also utilises the two-way and three-way moderation technique (difference in differences) to test whether the coefficient estimates of expensing SOBC vary across different levels of comparisons used in the analysis.

Chapter 5: Findings on the impact of expensing SOBC on selected banks' performance measures

5.1 Introduction

The first research question of this thesis aims to identify, analyse, compare, and evaluate the total effect of mandatory expensing of SOBC on selected performance measures of banks that operate across a wider international setting and different periods of investigation. This chapter presents and discusses the empirical results of this research question. The next section of this chapter presents the descriptive statistics. The third section starts with identifying the percentage of the recognised expense of SOBC in accordance with IFRS2/FAS123R relative to different accounting performance measures. It also present the distribution of this percentage within each of the US and EU banking sectors separately, and further distinguishes between that in their BHCs and CBs. The fourth section of this chapter presents the findings of evaluating the effect of SOBC expensing on ROA, ROE, Diluted EPS, and CIR over the time period of this study (2004-2011) using the traditional materiality threshold utilised by the earlier literature. The impact is reported based on the average for post implementation years and based on individual years to investigate the extent in the effect change over the pre and post implementation period. The fifth section explores the significance of the effect of IFRS2/FAS123R using statistical tests instead of utilising the materiality thresholds used in earlier literature As an additional and supplementary analysis, the difference in the change (Δ) of the selected performance measures over the period, 2004-2005 for EU banks and 2005-2006 for US banks, due exclusively to the mandatory introduction of IFRS2/FAS123R is also reported in this section. This section also presents the findings of investigating whether the adoption of IFRS2/FAS123R has reduced the recognised expense of SOBC over the studied period. A comparison between the pre-adoption and

post-adoption period, the pre-crisis and pre-adoption period, and over the three phases of the post-adoption period has been also conducted to enhance the analysis and to control for the effect financial crisis in 2008. Finally, this section provides and discusses the results of the statistical impact of recognising SOBC expenses on the selected financial performance indicators after controlling for different characteristics of banks such as, size, earning growth opportunity, operational structure and the variation in their activities. The impact is provided for the full sample, and separately, i) for banks that operate in the US versus those that operate in the EU, and ii) for banks domiciled in codified-law countries versus common law countries. Section 6 of this chapter concludes.

5.2 Descriptive statistics

Table (3) identifies the descriptive characteristics of the sampled banks. The banks included in the sample vary in size.

Table 3: Descriptive statistic [a]

Item/ $m	EU (274 Observations)			US (609 Observations)			Total (883 Observations)		
	Mean	Median	S.D	Mean	Median	S.D	Mean	Median	S.D
Total Assets	686,449.5	249,891.1	936,023.9	93,207.9	8,225.3	343,925.7	277,294.2	13,615.1	654,316.8
Net Interest Income	8,260.2	3,847.3	12,268.2	2,397.7	256.8	8,283.3	4,216.9	402.6	10,062.2
Net Profit	2,474.8	845.9	6,440.5	523.45	57.34	2,767.79	1,128.96	82.11	4,351.54
Operating Income	18,087.5	8,227.7	22,394.9	4,524.1	343.2	15,824.7	8,732.9	583.8	19,164.5
Pre-tax Profit	3,280.0	979.3	7,298.7	709.61	77.47	4,071.32	1,507.23	114.56	5,415.76
Opening Shareholders Equity (BV)	22,716.8	10,386.9	29,304.9	7,070.5	784.7	24,859.6	11,925.6	1,211.4	27,281.4
Market Capitalization	27,400.1	12,467.1	37,722.7	8,830.6	1,163.7	28,766.5	14,592.8	1,614.8	32,935.9
Employee No	55,017.0	23,916.0	67,263.6	15,190.3	1,638.0	50,523.2	27,548.8	2,600.0	59,159.7
SOBC Expense	166.1	13.9	378.3	87.1	3.7	418.2	111.7	4.9	407.7
SOBC Exp/ Staff Exp [b] %	1.89	1.26	2.12	4.52	3.18	4.62	3.70	2.53	4.19

[α] All figures are reported for the post-adoption years combined and in US currency ($) using the exchange rate at each closing period.

[b] Staff expense represents wages and benefits paid to employees and officers of the company. It includes all employee wages, fixed and variable compensations and other benefits such as health insurance and contributions to pension plans.

The average mean market capitalisation over the studied period is $14.6 billion ($27.4 billion and $8.8 billion for EU and US banks respectively). Table (3) also highlights various proxies of size, such as total assets, opening value of shareholders' equity and employee numbers. This result indicates that the EU banking sample is the larger than its

US counterparts. The average market value of banks in the sample is also relatively large compared with those of earlier studies, such as Shiwakoti and Rutherford (2010), Chalmers and Godfrey (2005), Street and Cereola (2004) and Botosan and Plumlee (2001).

The average expense of SOBC within the sample over the studied period is $111.7 million. The average SOBC expense is $166.1 million and $87.1 million for EU and US banks respectively. These absolute averages indicate that the recognised expense of SOBC in the EU banks is larger than that of US counterparts over the studied period. However, because of the size difference, the larger absolute SOBC expense in the EU banks does not necessarily mean that they use SOBC more than US banks. The ratio of SOBC expenses relative to staff costs indicates that US banks use options more than their EU counter-parts. The mean (median) of option expenses relative to staff costs over the studied period is 4.5% (3.2%) in US banks compared to 1.9% (1.3%) in EU banks. This suggests that US banking sector uses SOBC grants in employees' compensation packages more than twice than its EU counterpart. The following sections clarify this issue in more detail.

5.3 Impact of expense recognition on key performance indicators:

Table (4) identifies the percentage of SOBC expense recognised in accordance with IFRS2/FAS123R in respect to several variables used in prior studies (Shiwakoti and Rutherford, 2010; Schroeder and Schauer, 2008; Chalmers and Godfrey, 2005; Street and Cereola, 2004; Botosan and Plumlee, 2001).

Table 4: SOBC expense recognition relative to key variables for the studied period combined [a]

Item	EU %				US %				Total %			
	Obvs	Mean	Median	S.D	Obvs	Mean	Median	S.D	Obvs	Mean	Median	S.D
SOBC Exp Relative to Total Assets	274	0.02	0.01	0.02	609	0.06	0.04	0.06	883	0.05	0.03	0.05
SOBC Exp Relative to Net Interest Income	274	1.41	0.73	2.17	609	2.01	1.40	2.16	883	1.82	1.18	2.18
SOBC Exp Relative to Operating Income	274	0.57	0.28	0.90	609	1.40	0.96	1.76	883	1.14	0.74	1.59
SOBC Exp Relative to Adjusted Pre-tax Profit	244	3.02	1.52	4.77	519	6.12	3.50	8.08	763	5.13	2.76	7.33
SOBC Exp Relative to Adjusted Pre-tax Loss	30	6.22	0.92	9.90	90	8.57	3.87	9.69	120	7.98	3.36	9.76
SOBC Exp Relative to Opening Shareholders' equity	274	0.51	0.23	0.75	609	0.66	0.49	0.64	883	0.61	0.42	0.68
SOBC Exp Relative to Market Capitalization	274	0.43	0.17	0.81	609	0.76	0.34	3.69	883	0.66	0.29	3.10

[α] All figures are reported for the post-adoption years combined and in US currency ($) using the exchange rate at each closing period. All the reported figures are also winsorised at 2%.

5.3.1 SOBC expense recognition in respect of total assets

Table (4) shows that the mean (median) of recognised expense of SOBC represents on average 0.05% (0.03%) of banks total assets; and 0.02% (0.01%) and 0.06% (0.04%) for EU and US banks respectively. This result suggests that the US banking sector uses SOBC more, compared with their EU counterpart relative to their total assets. The result also shows immaterial impact on total assets using the materiality threshold of 0.5% used in earlier studies (Chalmers and Godfrey, 2005; Shiwakoti and Rutherford, 2010). Table 5 (A) presents the distribution of the recognised expense of SOBC relative to total assets over the sample, suggesting that the impact is immaterial in all groups apart from one US BHC using the 0.5% threshold.

Table 5 Panel (A): Distribution of SOBC expenses relative to different accounting measures.

Description [α]	EU				US				Total			
	N		Total	Percent	N		Total	Percent	N		Total	Percent
	CBs	BHCs			CBs	BHCs			CBs	BHCs		
Distribution of SOBC expenses relative to total assets												
0≥0.5%	184	90	274	100	89	519	608	99.84	273	609	882	99.89
0.5%≥5%	0	0	0	0	0	1	1	0.16	0	1	1	0.11
5%+	0	0	0	0	0	0	0	0	0	0	0	0
Total	184	90	274	100	89	520	609	100	273	610	883	100
Distribution of SOBC expenses relative to adjusted pre-tax profit												
0≥5%	145	59	204	83.60	32	305	337	64.93	177	364	541	70.90
5%≥10%	14	11	25	10.25	11	90	101	19.46	25	101	126	16.51
10%+	9	6	15	6.15	16	65	81	15.61	25	71	96	12.59
Total	168	76	244	100	59	460	519	100	227	536	763	100
Distribution of SOBC expenses relative to adjusted pre-tax loss												
0≥5%	14	7	21	70.00	13	37	50	55.56	27	44	71	59.17
5%≥10%	0	3	3	10.00	4	9	13	14.44	4	12	16	13.33
10%+	2	4	6	20.00	13	14	27	30.00	15	18	33	27.50
Total	16	14	30	100	30	60	90	100	46	74	120	100
Distribution of SOBC expenses relative to opening shareholders' equity												
0≥0.5%	144	53	197	71.90	40	271	311	51.07	184	324	508	57.53
0.5%≥5%	40	37	77	28.10	49	248	297	48.77	89	285	374	42.36
5%+	0	0	0	0	0	1	1	0.16	0	1	1	0.11
Total	184	90	274	100	89	520	609	100	273	610	883	100

Table 5 Panel (B): Distribution of SOBC expenses relative to ROA, ROE, DEPS and CIR.

Description	EU				US				Total			
	N		Total	Percent	N		Total	Percent	N		Total	Percent
	CBs	BHCs			CBs	BHCs			CBs	BHCs		
Distribution of SOBC expensing effect on ROA												
0≥5%	142	57	199	80.89	23	235	258	49.71	165	292	457	59.74
5%≥10%	9	9	18	7.32	16	127	143	27.55	25	136	161	21.05
10%+	20	9	29	11.79	21	97	118	22.74	41	106	147	19.22
Total	171	75	246	100	60	459	519	100	231	534	765	100
Distribution of SOBC expensing effect on ROE												
0≥5%	142	57	199	80.89	23	235	258	49.71	165	292	457	59.74
5%≥10%	9	9	18	7.32	16	127	143	27.55	25	136	161	21.05
10%+	20	9	29	11.79	21	97	118	22.74	41	106	147	19.22
Total	171	75	246	100	60	459	519	100	231	534	765	100
Distribution of SOBC expensing effect on EPS (Diluted)												
0≥5%	136	53	189	77.46	20	224	244	48.03	156	277	433	57.58
5%≥10%	10	12	22	9.02	17	119	136	26.77	27	131	158	21.01
10%+	24	9	33	13.52	22	106	128	25.20	46	115	161	21.41
Total	170	74	244	100	59	449	508	100	229	523	751	100
Distribution of SOBC expensing effect on CIR												
0≥5%	178	87	265	96.72	74	474	548	89.98	252	561	813	92.07
5%≥10%	6	3	9	3.28	14	35	49	8.05	20	38	58	6.57
10%+	0	0	0	0	1	11	12	1.97	1	11	12	1.36
Total	184	90	274	100	89	520	609	100	273	610	883	100

[α] Results are reported for the post-adoption years combined

5.3.2 SOBC expenses relative to adjusted pre-tax income and loss

Table 5 (A) shows the sample banks reporting pre-tax profits in their annual reports during the studied period and reveals that 763 and 120 of the sample observations are pre-tax profits and losses respectively. Over the studied period, one Irish bank had a pre-tax loss in 2008 and owing solely to the mandatory recognition of SOBC expense. Two US banks were similarly in this position in 2010 and 2011. Means (medians) of SOBC expense represents on average 5.13% (2.76%) of pre-tax profit, 3.02% (1.52%) and 6.12% (3.5%) for EU and US banks that reported pre-tax profit respectively (see table 4). The result also shows an average impact on pre-tax profits that slightly exceed the 5% materiality level for US banks, and fall slightly below the materiality level for EU banks. This also suggests that SOBC expense relative to pre-tax profit is more than twice in the US compared to that in the EU. The result for EU banks is relatively similar to the 4.1% immaterial mean option expense relative to pre-tax profit reported by Shiwakoti and Rutherford (2010). The result for US banks is, however, relatively lower than those of Schroeder and Schauer (2008) who reported a reduction of 15.91% in pre-tax profit owing to the FAS123R adoption in the US. Furthermore, the result is also different from those of Street and Cereola (2004) who reported a material impact over seven countries amounting to 38.95%. That is, the average impact on pre-tax profit is to a major extent smaller than that reported or estimated at the launch of IFRS2/FAS123R, particularly in the US.

Table 5 (A) supplements the analysis by presenting distribution of SOBC expenses relative to all sample observations that were pre-tax profits over the post implantation period. It shows that the recognised expense of SOBC relative the pre-tax profit exceeded the 5% of materiality test only for 29.1% of the total sample of banks (35.07% and 16.4% of the US

and EU sample respectively). Table 3 also shows that the mean expense of SOBC relative to pre-tax loss is 7.98%, (6.22% and 8.57 % for EU and US banks respectively). Table 5 (A) presents also the analysis for all of the pre-tax losses in the sample observations over the post implementation period. It shows that the recognised expense of SOBC relative the pre-tax loss exceeded the 5% materiality test across 40.83% of the total sample of banks (44.44% and 30% of the US and EU sample respectively).

That is, the impact of SOBC expenses on pre-tax profit is relatively higher than the 5% materiality threshold used in earlier studies for the US sample but not for the EU sample. In terms of the effect of option expenses on pre-tax loss, it is material in both regions (the US and EU). This result is similar to what Schroeder and Schauer (2008, p.303) reported that 'companies reporting net losses had material amounts of stock compensation costs'. That is, the concerns of the opponents of SFAS123R/IFRS2 in terms of the effect on pre-tax loss were to some extent valid. Yet the average impact on pre-tax profit due to mandatory adoption of SFAS123R/IFRS2 is not as severe as expected and it is slightly above the 5% of for US banks (slightly below for EU banks).

5.3.3 SOBC expenses as a percentage of opening shareholders' equity

Table (4) shows that the mean (median) of the recognised expense of SOBC represents 0.61% (0.42%) relative to banks' opening shareholders' equity (0.51% (0.23%), and 0.66% (0.49%)) for EU and US banks respectively. The results show an average impact on opening shareholders' equity that slightly exceeds the 0.5% materiality level for US and EU banks. Yet the corresponding median 0.42%, (0.23% and 0.49% for EU and US banks respectively) shows that the effect falls slightly below the 0.5% materiality threshold used in earlier studies for the majority of our sample banks. The finding is relatively different from those reported

in earlier studies, such as Street and Cereola (2004) and Shiwakoti and Rutherford (2010). Table 5 (A) also shows that impact on opening shareholders' equity exceeded the 0.5% materiality threshold across 42.47% of the total sample banks (48.93% and 28.1% of the US and EU sample respectively). That is, the recognised expense of SOBC relative to banks' opening shareholders' equity falls slightly below the 0.5% materiality level for the majority of the EU and US sample banks.

5.4 Impact of SOBC expensing on ROA, ROE, Diluted EPS, and CIR

Table 6 (A) presents the effect of expensing the fair value of SOBC on the selected performance measures, namely the ROA, ROE, Diluted EPS, and CIR, together with the magnitude of the recognised expense relative to opening shareholders' equity. The impact is also reported based on average for post implementation years along with individual years to investigate the extent in the effect change over the pre and post implementation period. Pre-adoption period data has been manually extracted from the first year adoption comparative figures or the pro-forma disclosure regarding the impact of SOBC expense. The effect is ascertained as the difference between the reported and adjusted ratios for SOBC expensing. Following earlier literature, the 5% materiality threshold is applied to assess the impact on ROA, ROE, DEPS, while the 0.5% materiality level is applied in respect to opening shareholders' equity. A 1% materiality threshold will be employed to assess the materiality of the impact on cost to income ratio.

Table (6) Panel (A): The effect of SOBC expensing on selected financial measures.

Financial ratios [b]	EU				US				Total			
	N	mean	median	S.D	N	mean	median	S.D	N	mean	median	S.D
Return on assets (ROA)												
Difference [α]	274	0.02	0.01	0.02	609	0.06	0.04	0.05	883	0.04	0.03	0.04
Differences as a percentage of reported ROA	246	3.76	1.98	5.04	519	9.55	5.06	15.02	765	7.69	3.96	12.98
Return on equity (ROE)												
Difference	274	0.42	0.22	0.54	609	0.59	0.47	0.48	883	0.54	0.40	0.50
Differences as a percentage of reported ROE	246	3.76	1.98	5.04	519	9.55	5.06	15.02	765	7.69	3.96	12.98
Eearnings per share (Diluted)												
Difference	274	7.93	2.01	16.7	609	9.96	6.27	10.07	883	9.33	5.26	12.57
Differences as a percentage of reported EPS (Diluted)	244	4.23	2.14	5.84	508	9.32	5.31	12.63	752	7.67	4.06	11.15
Cost to income ratio												
Difference	274	0.64	0.38	0.75	609	1.30	0.97	1.12	883	1.10	0.77	1.06
Differences as a percentage of reported CIR	274	1.04	0.61	1.20	609	2.12	1.61	1.77	883	1.79	1.24	1.69
Option expense as a percentage of opening shareholders' equity	274	0.51	0.23	0.75	609	0.66	0.49	0.64	883	0.61	0.42	0.68

[α] Difference is calculated as an absolute difference between used ratios adjusted for SOBC expenses and those reported in the annual financial reporting. The difference is measured in cents while other differences are measured in percentages. However, differences as a percentage is calculated as follow: ratios adjusted for SOBC expenses minus reported ratio and the difference is divided by reported ratio. The impact of stock option expense on ROE in percentage mirrors the impact observed on ROA. Botosan and Plumlee (2001) reported that the impact of stock option expense on total net income, basic EPS, and E/P ratios in parentage mirrors the impact observed on diluted EPS and ROA.

[b] All reported figures are reported for the post-adoption years combined and winsorised at 2%. Return on assets (ROA) is profit after tax and extraordinary items to average total assets. Diluted earning per share (DEPS) is measured by profit attributable to equity shareholders to the weighted average numbers of shares on issue plus dilution shares. Return on equity (ROE) is calculated as net profit after tax divided by average shareholders' equity excluding non-controlling interests. Cost to income ratio (CIR) is a bank's operating costs relative to its total net interest and non-interest income (Christian, *et al.*, 2008).

Table (6): Panel (B): The individual yearly impact of SOBC expensing on selected financial measures in the EU sample.

Financial ratios	2004				2005				2006				2007				2008				2009				2010				2011			
	n	mean	median	S.D	n	mean	median	S.D	n	mean	median	S.D	n	mean	median	S.D	n	mean	median	S.D	n	mean	median	S.D	n	mean	median	S.D	n	mean	median	S.D
Return on assets (ROA)																																
Difference	34	0.02	0.01	0.02	36	0.02	0.01	0.02	38	0.03	0.02	0.02	41	0.02	0.01	0.02	41	0.01	0.01	0.01	42	0.01	0.01	0.02	39	0.02	0.01	0.02	37	0.01	0.01	0.02
Differences as a percentage of reported ROA	33	2.83	1.83	3.30	35	2.71	1.96	2.53	38	3.19	1.84	4.02	41	2.83	1.40	3.90	33	3.56	2.06	4.61	34	5.09	2.29	5.69	36	3.63	1.52	4.97	29	5.96	2.58	8.25
Return on equity (ROE)																																
Difference	34	0.54	0.32	0.73	36	0.50	0.32	0.64	38	0.68	0.40	0.82	41	0.43	0.27	0.43	41	0.25	0.19	0.26	42	0.41	0.18	0.56	39	0.35	0.14	0.53	37	0.33	0.12	0.47
Differences as a percentage of reported ROE	33	2.83	1.83	3.30	35	271	1.96	2.53	38	3.19	1.84	4.02	41	2.83	1.40	3.90	33	3.56	2.06	4.61	34	5.09	2.29	5.69	36	3.63	1.52	4.97	29	5.96	2.58	8.25
Earnings per share (Diluted)																																
Difference	34	3.91	2.70	3.85	36	8.26	3.17	15.11	38	11.09	3.82	19.12	41	6.36	3.02	6.32	41	3.75	1.49	5.39	42	9.87	1.12	23.91	39	8.92	1.08	20.53	37	7.49	1.39	17.06
Differences as a percentage of reported EPS (Diluted)	33	3.71	2.16	4.70	35	2.99	2.23	2.72	38	3.51	2.07	4.22	41	3.00	1.68	3.99	33	3.59	2.06	4.62	34	6.60	2.83	7.53	35	4.15	1.35	6.17	28	6.58	2.71	9.40
Cost to income ratio (CIR)																																
Difference	34	0.66	0.29	0.95	36	0.65	0.53	0.56	38	0.81	0.53	0.79	41	0.65	0.37	0.65	41	0.46	0.36	0.46	42	0.57	0.38	0.65	39	0.71	0.27	1.02	37	0.68	0.28	0.97
Differences as a percentage of reported CIR	34	1.06	0.51	1.45	36	1.09	0.82	0.99	38	1.43	0.97	1.38	41	1.13	0.68	1.14	41	0.66	0.54	0.67	42	0.87	0.55	0.96	39	1.10	0.48	1.52	37	1.04	0.46	1.47
Option expense as a percentage of opening shareholders' equity	34	0.63	0.34	0.98	36	0.58	0.32	0.73	38	0.82	0.49	1.00	41	0.58	0.37	0.77	41	0.30	0.18	0.55	42	0.55	0.22	0.80	39	0.39	0.15	0.68	37	0.34	0.12	0.57

Table (6): Panel (C): The individual yearly impact of SOBC expensing on selected financial measures in the US sample

Financial ratios	2004 α				2005				2006				2007				2008				2009				2010				2011			
	n	mean	median	S.D	n	mean	median	S.D	n	mean	median	S.D	n	mean	median	S.D	n	mean	median	S.D	n	mean	median	S.D	n	mean	median	S.D	n	mean	median	S.D
Return on assets (ROA)																																
Difference					93	0.11	0.09	0.07	99	0.06	0.05	0.05	102	0.07	0.05	0.05	102	0.06	0.05	0.05	102	0.06	0.04	0.04	102	0.05	0.04	0.04	102	0.05	0.04	0.03
Differences as a percentage of reported ROA					92	8.76	5.35	9.41	97	5.24	3.98	4.98	98	11.02	4.74	18.19	80	13.11	6.19	16.43	69	14.14	5.32	26.56	82	8.62	5.92	8.37	93	6.83	5.72	4.97
Return on equity (ROE)																																
Difference					93	0.91	0.76	0.61	99	0.61	0.53	0.50	102	0.64	0.51	0.48	120	0.64	0.48	0.52	102	0.59	0.44	0.51	102	0.55	0.43	0.43	102	0.53	0.43	0.39
Differences as a percentage of reported ROE					92	8.76	5.35	9.41	97	5.24	3.98	4.98	98	11.02	4.74	18.19	80	13.11	6.19	16.43	69	14.14	5.32	26.56	82	8.62	5.92	8.37	93	6.83	5.72	4.97
Eearning per share (Diluted)																																
Difference					93	13.12	10.21	10.23	99	10.22	5.82	11.82	102	10.89	6.50	10.85	102	10.93	6.72	10.44	102	9.46	6.23	9.08	102	8.78	5.91	8.47	102	9.50	6.52	9.52
Differences as a percentage of reported EPS (Diluted)					92	8.74	5.35	9.43	97	5.21	3.80	4.97	98	11.13	4.71	18.28	79	12.70	6.04	15.69	65	11.79	5.41	14.98	78	9.25	6.04	9.09	91	7.12	5.72	5.23
Cost to income ratio (CIR)																																
Difference					93	1.93	1.31	1.71	99	1.26	1.05	1.02	102	1.53	1.08	1.37	102	1.56	1.00	1.45	102	1.18	0.86	0.96	102	1.13	0.85	0.86	102	1.16	0.95	0.81
Differences as a percentage of reported CIR					93	3.84	2.64	3.57	99	2.23	1.73	1.84	102	2.48	1.79	2.06	102	2.36	1.60	2.04	102	1.97	1.41	1.69	102	1.84	1.29	1.46	102	1.87	1.42	1.37
Option expense as a percentage of opening shareholders' equity					93	1.01	0.81	0.83	99	0.71	0.57	0.67	102	0.68	0.55	0.58	102	0.70	0.50	0.67	102	0.66	0.47	0.66	102	0.63	0.47	0.79	102	0.56	0.45	0.44

α The pre-adoption year for the US sample is 2005, whereas it is 2004 for the EU sample because the mandatory IFRS2 was first applied to accounting periods starting 1st January 2005, whereas FAS123 commenced on reporting periods beginning after June 15, 2005, which implies that financial reporting statements for 2006 is the first adoption year.

Table 6 (A) shows that the average impact of IFRS2 on the selected performance measures in the EU sample falls a little below the 5 % materiality thresholds for ROA, ROE and DEPS, while this impact is around the materiality thresholds for rest of the selected variables. It also shows that the effect in the US sample falls above the materiality thresholds for all the selected performance measures, and it is more than twice of that in the EU sample.

Table 6 (B) (C) shows that the impact of the standards on the selected performance measures in the pre-adoption period (2004 for the EU sample and 2005 for the US sample) is more than that in the first adoption year (2005 for the EU sample and 2006 for the US sample). This may be due to the fact that banks accelerated the vesting condition of SOBC grants to avoid recognising standing unvested grants using the fair value approach in the first-year adoption in their financial reporting (Choudhary *et al*., 2009). Table 6 (B) also shows that until 2008, all differences' percentages in the EU banks are less than their related materiality thresholds, indicating immaterial effects on the studied performance indicators. On the other hand, the majority of differences' percentages in 2009 slightly exceed the materiality level in the EU sample, indicating a modest effect over this year on the selected performance indicators.

In the US sample, the mean effect on the majority of differences' percentages is also higher in 2009 compared to that in previous years. This position (with a gradually increasing effect) can be due to the settlement that took place at the end period of the payment cycle which usually takes from three to five years if a bank granted a fixed level of SOBC annually (Botosan and Plumlee, 2001). However, the effect of SOBC expenses did not stabilise afterwards. Rather, it decreased dramatically in 2010 compared to that in 2009 in both samples.

This situation might also raise another possible reason given the negative effect of the 2008 global financial crisis on performance measures of the majority of the banks. The mean (median) of some measures (ROA, ROE, DEPS) that are usually used along with the market performance measures, such as the share price, as mixed targets to exercise SOBC grants noticeably drop down in 2008 and 2009 compared to those reported in 2007[1]. Vesting conditions of performance SOBC grants that are issued previous years had also been consequently influenced by this reduction in performance indicators in 2008. Banks, therefore, might had decided to defer the decision to cancel (or more probably to modify) the early specified onerous vesting conditions to new ones that are more realistic which reflect the negative impact of the crisis and may be easier to attain in the near future, more likely 2009. Such a deferral helps banks to delay the incremental cost (from 2008 to 2009) incurred under the FAS123R/IFRS2 accounting requirements in the case of modifying performance vesting conditions or cancelling the earlier issued grants. The current standards require firms to accelerate the expense of these grants and immediately recognise the remaining amount that it otherwise would have recognised over the remaining period in the case of cancellation. In the case of modifying the vesting conditions of earlier issued grants, firms are also required to recognise, as a minimum, the cost of the original grant if it were not modified. However, if the modification of SOBC vesting conditions increases the fair value of the grants (more probably to happen when releasing the vesting conditions), firms are required to spread the additional cost over the period from the modification to the new vesting date. Furthermore, the management of banks may introduce a decision to delay the exercise date of modified

[1] In 2008 the reported ROA, ROA, and DEPS in the EU sample, drop down by 92% (61%), 99% (58%), and 83% (64%) respectively compared 2007. In 2009 these measures also drop down by 75% (70%), 72% (69%) and 64 (49%) compared to 2007 reported measures

awards, consequently the incremental cost, to the next year(s) and allow employees to exercise these awards instead of cancelling them. This decision helps banks to increase the reported earnings or lessen the reported loss in 2008 and also stand behinds the increase of the options expense impact in 2009. Both accounting and market based measures that are mainly used as option vesting conditions increased in 2009 compared to 2008 and may have potentially caused the increase of the SOBC expense and its impact on the selected performance measures. The same explanations can be applied to the US sample as well, where average effect of FAS123R on the selected performance measures is relatively high in 2009[2] (see table 6 (C)).

In 2010, the impact returned to its normal level for the EU and the US sample respectively. In 2011, the impact of SOBC expenses grew up in the EU sample again compared with that in the other years. This also could be owing to the same scenarios mentioned above given the reported figures in 2011 are less than those reported in 2010 and 2009. In the US, all differences' percentages in 2010 and 2011 slightly went down compared to the average impact over the studied period. Such a decline might imply the effect of earlier cautions that firms would curtail using SOBC grants and use different means to compensate their employees starts to appear after completing the first options cycle in the post-adoption period. This matter is also apparent from the slight decline 2010 and 2011 for both samples in the percentage of SOBC expense to opening shareholders' equity from the average percentage over the studies period. This issue is investigated more in section 5.5 and using statistical tests.

[2] In the US, a similar situation took place. In 2008 the reported measures in the US sample, drop down by 88% (38%), 96% (36%), and 95% (33%) respectively compared 2007. In 2009 these measures also drop down by 92% (55%), 98% (55%) and 76 (46%) compared to 2007 reported measures (results not reported).

All together, the overall and average impact on the studied performance measures in the EU sample is slightly below the materiality threshold for ROA, ROE and DEPS and around the materiality threshold for the other selected indicators. The results suggest a modest impact on EU banks in comparison to that in the US sample which is more than twice for the majority of the selected measures compared to those in the EU-counterpart. They also suggest that the overall impact in both the EU and the US sample is less than the predicted impact prior to the adoption of IFRS2/FAS123R or even to that reported by earlier studies.

5.5 Assessing the statistical impact of SOBC expenses on selected measures

This section explores the significance of the effect of IFRS2/FAS123R using statistical tests instead of utilising a materiality threshold. As an additional and supplementary analysis, the difference in the change of the selected performance measures exclusively due to the introduction of IFRS2/FAS123R is also reported. Table 7 (A) shows the significance of the mean (median) differences between the selected reported and adjusted ratios for SOBC expensing using statistical tests over the post implantation years combined in both US and EU banks. Both WSR and T tests suggest that all differences between reported and adjusted ratios are statistically significant, indicating a material influence on the selected performance measures. The findings support the IASB/FASB argument that if SOBC expenses are not recognised in the income statement, the financial statements will be less transparent. Generally, these findings support the view of the IASB that recognition and disclosure cannot be viewed as equivalents or surrogates for one another.

Table 7 (A): The effect on selected measures with and without adjustment for SOBC expenses over post and pre adoption period.

	EU Banks over the post adoption period					US Banks over the post adoption period				
Descriptions	**ROA** [α]	**ROE** [α]	**Diluted EPS** [α]	**CIR**	**PBT**	**ROA** [α]	**ROE** [α]	**Diluted EPS** [α]	**CIR**	**PBT**
Mean Adjusted	0.56	10.78	191.44	63.86	3446.14	0.67	5.83	110.57	65.34	796.72
Mean Not Adjusted	0.54	10.36	183.51	63.21	3280.05	0.61	5.23	100.61	64.04	709.61
T test for mean differences [b]	14.74***	11.36***	5.1***	11.2***	7.27***	24.5***	26.9***	20.7***	20.4***	5.14***
Median Adjusted	0.55	11.86	105.5	61.7	996.65	0.87	8.89	107.37	63.47	82.7
Median Not Adjusted	0.54	11.64	103.49	61.06	979.25	0.83	8.42	101.1	62.17	77.47
WSR test for mean differences [b]	14.06***	13.85***	13.67***	13.91***	13.75***	21.37***	21.38***	21.36***	21.37***	21.37***
	EU Banks over the pre adoption period					**US Banks over the pre adoption period**				
Mean Adjusted	0.68	20.38	229.49	64.33	4134.35	1.76	14.65	213.9	56.28	1337.66
Mean Not Adjusted	0.66	19.84	225.58	63.75	4013.85	1.65	13.74	200.78	54.35	1272.23
T test for mean differences [b]	4.47***	3.78***	1.59*	3.98***	2.31**	8.58***	11.39***	10.11***	10.52***	2.36**
Median Adjusted	0.7	16.68	103.12	61.59	1435.31	1.58	14.01	183.58	57.72	107.54
Median Not Adjusted	0.69	16.36	100.42	61.01	1423.66	1.49	13.25	173.37	56.41	105.99
WSR test for mean differences [b]	5.08***	5.08***	5.86***	5.1***	5.08***	8.37***	8.38***	8.37***	8.37***	8.37***

Table 7 (B): The difference in the change of the selected performance measures exclusively due to the introduction of IFRS2/FAS123R

	EU Banks (2004-2005)					US Banks (2005-2006)				
Descriptions	**ΔROA%**	**ΔROE%**	**ΔDEPS%**	**ΔCIR%**	**ΔPBT%**	**ΔROA%**	**ΔROE%**	**ΔDEPS%**	**ΔCIR%**	**ΔPBT%**
Mean Difference in the change [c]	3.51	3.49	5.61	1.08	5.59	4.89	5.62	5.85	2.61	5.45
T test for mean differences [b]	3.54***	3.47***	3.19***	5.63***	1.89*	6.71***	6.76***	7.51***	9.04***	4.31***
Median Difference in the change	2.02	2.02	3.21	0.75	1.73	3.19	3.8	4.13	1.82	3.09
WSR test for median difference [b]	5.08***	5.08***	5.86***	5.1***	5.08***	8.37***	8.38***	8.37***	8.37***	8.37***

[a] .ROA, ROE and DEPS are in cents.

[b]: *, ** and *** signify significant at 10%, 5% and 1% respectively

[c]: The difference in change reflects the difference in the change of the reported ratios without and with adjusting for SOBC expense in the first adoption year.

Table 7 (B) also highlights that the average difference in the change (Δ) of the selected performance measures over the period, 2004-2005 for EU banks and 2005-2006 for US banks, exclusively due to the mandatory introduction of IFRS2/FAS123R. It shows a reduction in the change of these measures that falls around their related traditional materiality thresholds, used in earlier studies. Also both the T and WSR tests indicate that this reduction was statistically significantly material. Again, the impact is still modest compared to that predicted by the majority of related existing literature. To further investigate whether the adoption of IFRS2/FAS123R has reduced the use of SOBC grants over the studied period, the sample has been divided into four distinctive periods: i) Pre-adoption period 2004 and 2005 for EU and US banks respectively ii) pre-global financial crisis period: from the first adoption of the IFRS2/FAS123R until 2007; iii) the global financial crisis in 2008; iv) the post global financial crisis years from 2009 until 2011. A comparison between the pre-adoption and post-adoption period, the pre-crisis and pre-adoption period, and over the three phases of the post-adoption period has been also conducted to enhance the analysis and control for the effect financial crisis in 2008. The SOBC expense in both absolute values and relative to total staff expense is compared over these periods in table (8).

The results indicate that the mean (median) SOBC expense in absolute values did not vary significantly over the pre and the post adoption period in both samples. Table (8) also shows that there had been increase in the mean (median) SOBC expense in absolute values over the pre-adoption and the pre-crisis period, yet such an increase is insignificant at the 5% level. The change is also redundant and insignificant over the studied period using the absolute values.

Table 8: Comparison of SOBC expense and SOBC expense relative to staff expense over the studied period using T and U test.

Year / Description	SOBC Exp (EU)		SOBC Exp/ Staff Exp [b] (EU)		SOBC Exp (US)		SOBC Exp/ Staff Exp (US)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
pre-adoption	120.5	16.35	1.6	0.96	65.43	4.56	6.25	4.59
post-adoption	166.1	13.87	1.89	1.26	87.11	3.6	4.52	3.18
A-pre-crisis	147.9	25.24	2.07	1.52	81.94	2.95	4.63	3.29
B-2008	122.37	8.89	1.47	1.03	83.8	3.79	4.91	3.39
C- post-crisis	199.02	9.13	1.87	1.08	91.61	3.89	4.31	3.07
T (U) test for median (mean) differences (post vs pre-adoption) [a]	0.81	-0.01	0.87	0.61	0.67	-1.73*	-2.83***	-3.81***
T (U) test for median (mean) differences (pre-crisis vs pre-adoption)	0.45	0.76	1.91*	1.95*	1.01	2.04**	-2.47**	-2.93***
T (U) test for median (mean) differences (2008 vs pre-crisis)	-0.41	-1.73*	-3.31***	-2.63***	0.48	0.7	0.69	0.36
T (U) test for median (mean) differences (post-crisis vs 2008)	1.18	0.8	0.98	0.59	0.16	0.13	-1.11	1.25
T (U) test for median (mean) differences (post-crisis vs pre-crisis)	1.02	-1.63	-0.71	-2.5**	0.26	1.09	-1.48	-0.99

[a] *, ** and *** signify significant at 10%, 5% and 1% respectively.

[b] Staff expenses include employees' salaries, benefits and compensations.

However, relative to total staff expense, SOBC expense had significantly decreased in the US bank over the pre-adoption and post-adoption period, and the pre-crisis and pre-adoption period, respectively at the 5% level. This result potentially indicates that accelerating the vesting condition of SOBC grants, to avoid recognising standing unvested grants using the fair value approach in the first-year adoption is more significant in the US sample compared with EU banks.

Table (8) also shows that another common decrease, yet insignificant, in SOBC expenses relative to total staff expense started to appear in the post crisis period (2009-2011) in both samples. This indicates that the full impact of the early predicted reduction in using SOBC grants due to the compulsory adoption of IFRS2/FAS123R came to light after the first option cycle in the post-adoption period is over. That is, employees fears that companies would reduce SOBC programs due to the mandatorily adoption of IFRS2/FAS123R started to reflect its effect on the SOBC expense after finishing the first post-adoption option cycle. Finally, table (8) shows that SOBC expense relative to total staff expense significantly decreases in 2008 compared to pre-crisis period in the EU sample. Interestingly, the main reason standing behind this significant decrease in SOBC expense in 2008, particularly in the EU sample is the cash-settled based expense.

Figure 1: Cash-settled Compensations in US and EU

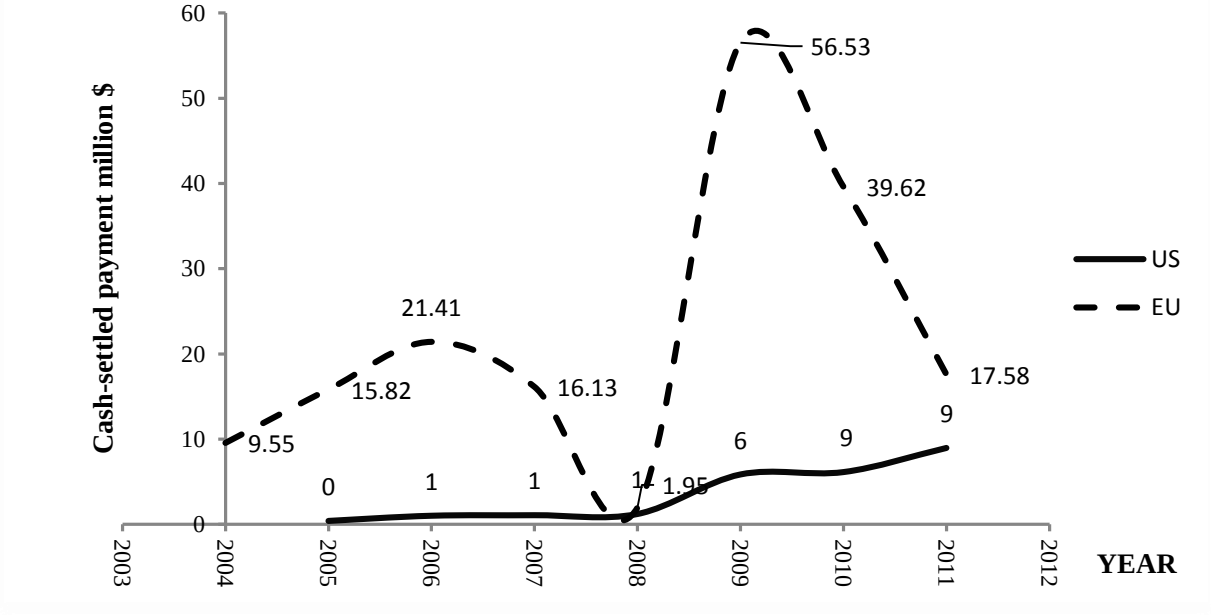

Figure (1) shows that in 2008, cash-settled expense dropped down dramatically, particularly in the EU sample. Given the negative effect of the crisis on the majority of accounting and market performance indicators, this reduction suggests that bank management exploited the opportunity to obtain advantages from the accounting requirement of the standard for cash-based payment. Both IFRS2 and FAS123R allow companies to modify the fair value determined at grant date for cash-settled grants at each reporting period date and on settlement. Therefore, companies can even reverse the expense when option vesting conditions in a particular year (particularly accounting and market performance measures) could influence firms' estimates of expenses in previous periods. Indeed, the stated expenses, particularly cash-settled based in a specific year could even become negative. This case does exist in the sample of this study where there are 11 observations with negative SOBC expenses. This accounting deficiency in the standard along with the negative effect of the crisis on the given performance vesting conditions helped managers to increase the reported

earnings or lessen the reported loss in 2008. More pointedly, banks' management might also at the same time have reduced the earlier specified onerous vesting conditions to a new more realistic basis that is easier to attain in the near future, more likely 2009. This could be explained by the dramatic increase in cash-settled based expenses in 2009, particularly in the EU sample.

Finally, figure (1) also shows that banks in both samples have gradually moved towards using cash-settled based compensation over the studied period. The mean of cash-settled based compensation in US banks rose from $1 million in 2005 to $9 million in 2011, whereas in EU banks it increased from $9.55 million in 2004 to $18 million in 2011. The main reason for such a movement towards cash-settled based compensation, again, could be that banks can modify the fair value of options granted at each reporting period date and on settlement. However, for equity-settled based compensation, companies are allowed to modify the fair value calculated at the grant date, only if the vesting conditions of option grants are non-performance-based and they are more likely to forfeit[3]. This seems to give banks an opportunity to obtain advantages from the accounting requirement of the standard for cash-settled based compensation. Such an issue, therefore, should be given more consideration by the standard-setters to control management's scope to modify the fair value of cash-settled based grants or reverse the expense in order to smooth their earnings.

5.5.1 Size effect and the impact of SOBC expenses

To control for banks' size effect on the materiality of the impact of IFRS2/FAS123R on selected performance measures, each of the EU and US samples has been divided into four

[3] For example, if, vesting conditions are non-market performance based, banks are allowed to adjust their estimates of equity-based awards that will vest at every year-end, such that on the vesting date, the expense should be equal to the grant-date fair value.

separate sub-samples, based on the quartiles of banks' average total assets. The impact of mandatory IFRS2/FAS123R on selected performance measures according to banks' sizes within each of the EU and US banks is shown in Table (9). The results indicate that the material effect of mandatory recognition regime of IFRS2/FAS123R in both samples is noticeably confined to larger banks; the larger the bank, the more the impact. The Kruskal-Wallis test and its comparative one-way analysis of variance (ANOVA) also indicates that the impact of IFRS2/FAS123R adoption on the selected measures varies significantly between banks according to their size within each of EU and US samples. On one hand, this might intuitively be due to the fact that the larger the banks, the more heavily they adopt SOBC grants where the number of issued grants is a major factor that plays a key role in determining the recognised expense and therefore on its effect on the selected measures. Earlier studies, such as Melissa (2004) and Core and Guay, (2005) have found evidence that firm size has a positive and significant relationship with the use of SOBC.

On the other hand, vesting terms and conditions also play a key role in determining the SOBC expense. Avraham, *et al*. (2012) documented evidence that the level of operational complexity of large banks is far more than that of small ones. This might mean that these conditions could also be more relaxed in larger banks due to their greater complexity, and therefore the expense and its effect on their selected measure are more material. This raises an interesting issue to be investigated by future research interested in the structure and motivational aspects of SOBC contracts and other related corporate governance issues.

Table 9: The impact of SOBC expensing on selected financial measures (size and growth effect).

Financial ratios [a]	Size	EU Banks			US banks			U Test	T Test	Growth	EU Banks			US banks			U Test	T Test
		mean	median	SD	mean	median	SD	Z	T		mean	median	SD	mean	median	SD	Z	T
Earnings per share (Diluted) [b]																		
	Q1	3.51	1.68	5.30	11.13	3.03	17.61	-4.39***	-4.22***	Q1	3.72	2.16	4.48	6.28	3.36	9.19	-2.15**	-2.01**
Differences as a percentage of reported DEPS	Q2	2.60	2.01	4.08	7.95	5.21	10.76	-6.70***	-5.23***	Q2	3.28	2.06	5.15	8.70	4.95	10.38	-6.11***	-4.66***
	Q3	3.52	2.18	3.54	8.84	5.61	11.23	-5.07***	-4.99***	Q3	4.49	2.33	6.15	8.37	5.47	11.12	-4.51***	-3.18***
	Q4	7.88	4.57	8.33	9.86	6.99	10.35	-2.4..2**	-1.34	Q4	5.19	2.30	6.91	15.65	8.11	18.05	-7.53***	-6.29***
Kruskal- Wallis, Chi squared (X^2)			21.61***			21.37***						7.88**			44.09***			
ANOVA, F-value			10.75***			4.21***						1.42**			12.64***			
Return on assets (ROA)																		
	Q1	2.91	1.69	4.02	11.87	3.05	21.36	-4.48***	-4.30***	Q1	3.21	2.06	3.74	6.67	3.26	14.26	-3.78***	-3.28***
Differences as a percentage of reported ROA	Q2	2.49	1.54	4.30	7.81	4.97	10.70	-7.40***	-5.18***	Q2	3.29	1.48	5.68	9.26	4.82	13.81	-6.58***	-4.16***
	Q3	3.36	2.09	3.31	8.58	5.50	12.80	-5.20***	-4.50***	Q3	3.74	2.22	4.51	8.53	5.46	13.15	-5.01***	-3.79***
	Q4	6.78	4.12	7.02	10.57	6.87	14.57	-2.97***	-2.33**	Q4	4.65	2.10	5.89	15.02	7.44	18.06	-8.14***	-4.56***
Kruskal- Wallis, Chi squared (X^2)			22.30***			24.34***						9.09**			44.30***			
ANOVA, F-value			9.70***			4.22***						1.72**			7.08***			
Return on equity (ROE)																		
	Q1	2.91	1.69	4.02	11.87	3.05	21.36	-4.48***	-4.30***	Q1	3.21	2.06	3.74	6.67	3.26	14.26	-3.78***	-3.28***
Differences as a percentage of reported ROE	Q2	2.49	1.54	4.30	7.81	4.97	10.70	-7.40***	-5.18***	Q2	3.29	1.48	5.68	9.26	4.82	13.81	-6.58***	-4.16***
	Q3	3.36	2.09	3.31	8.58	5.50	12.80	-5.20***	-4.50***	Q3	3.74	2.22	4.51	8.53	5.46	13.15	-5.01***	-3.79***
	Q4	6.78	4.12	7.02	10.57	6.87	14.57	-2.97***	-2.33**	Q4	4.65	2.10	5.89	15.02	7.44	18.06	-8.14***	-4.56***
Kruskal- Wallis, Chi squared (X^2)			22.30***			24.34***						9.09**			44.30***			
ANOVA, F-value			9.70***			4.22***						1.72**			7.08***			
Cost to income ratio (CIR)																		
	Q1	0.70	0.47	0.74	2.04	1.04	2.13	-5.45***	-6.79***	Q1	0.85	0.61	0.76	1.74	1.25	1.40	-5.80***	-1.88**
Differences as a percentage of reported CIR	Q2	0.53	0.42	0.49	2.11	1.63	1.72	-9.32***	-10.8***	Q2	0.64	0.48	0.78	2.16	1.72	1.59	-7.80***	-9.25***
	Q3	1.12	0.77	1.24	2.04	1.68	1.56	-5.35***	-4.66***	Q3	1.22	0.78	1.40	2.33	1.65	2.03	-5.09***	-4.81***
	Q4	1.94	1.42	1.58	2.30	1.72	1.64	-2.04**	-1.52	Q4	1.35	0.84	1.44	2.27	1.69	1.95	-4.90***	-3.81***
Kruskal- Wallis, Chi squared (X^2)			42.46***			16.60***						13.74***			9.03**			
ANOVA, F-value			22.97***			0.55						5.10***			3.48**			
	Q1	0.29	0.17	0.34	0.57	0.37	0.73	-4.29***	-3.78***	Q1	0.31	0.23	0.37	0.66	0.47	0.64	-2.84***	-5.74***
Option expense as a percentage of opening shareholders' equity	Q2	0.31	0.17	0.53	0.59	0.45	0.47	-6.45***	-3.98***	Q2	0.39	0.20	0.67	0.58	0.49	0.47	-5.13***	-2.02**
	Q3	0.48	0.24	0.65	0.65	0.52	0.66	-3.76***	-1.73*	Q3	0.55	0.27	0.77	0.70	0.50	0.82	-3.26***	-1.35
	Q4	1.01	0.50	1.09	0.82	0.60	0.66	-0.91	1.28	Q4	0.76	0.30	0.98	0.68	0.53	0.60	-5.03***	0.94
Kruskal- Wallis, Chi squared (X^2)			35.35***			32.85***						15.09***			1.27			
ANOVA, F-value			15.15***			4.96***						5.02***			0.95			

[α] All figures are reported for the post-adoption years combined

[b] .ROA, ROE and DEPS are reported in cents

Furthermore, the mean (median) impact of FAS123R on the selected measures is material in the majority of US banks with the effect becoming higher in larger banks[4] . Whereas in the EU, the average impact of IFRS2 is around the materiality threshold, particularly for the largest sample banks (the fourth quarter). This might due to the fact that use of SOBC grants in US banks is relatively higher compared to that in EU banks. The Mann–Whitney *U* test and its comparative T test also shows that the impact of the expensing regime to account for SOBC after controlling for banks size is also significantly higher in the US banks for the large majority of selected performance measures compared to its EU counterpart. This might intuitively imply that the effect of international adoption for a highly converged treatment for SOBC varies significantly from one context to another based on the size and the tendency to use SOBC grants.

5.5.2 Growth characteristics and the impact of SOBC expenses

To also control for banks' potential growth rate effect on the materiality of the impact of IFRS2/FAS123R on selected performance measures, each of the EU and US samples has been divided into four separate sub-samples, based on the quartiles of banks' average market to book value. Table (9) suggest that the material effect of mandatory recognition regime of IFRS2/FAS123R in each of the EU and US samples is higher in more rapid growth banks (the 3rd and 4th Q). The Kruskal-Wallis test and its comparative one-way analysis of variance (ANOVA) also suggests that the impact of IFRS2/FAS123R adoption on the selected measures varies significantly between banks according to their size within each of EU and US samples. Chalmers and Godfrey (2005) and Dhar and De (2011) reported that the effect of SOBC expensing is not necessarily more significant for companies with higher potential

[4] The means effect of FAS123R on 1st quartile in US banks is relatively the highest. However this is due to some extreme observations initiated by the sample division. The median effect also suggest the larger the bank, the higher the effect.

growth rates. Our result suggest the effect of SOBC expensing in each of the US and EU bank-sample varies significantly among banks according to their potential growth rates, yet the mean (median) impact is significantly higher in higher potential growth rates' banks. That is, in both regions, banks that are more rapidly growing recognising marginally higher expensing. The result is in line with those of earlier studies conducted in the US by Botosan and Plumlee (2001), and in the UK by Shiwakoti and Rutherford (2010). The *U* test and its comparative T test also show that the impact of expensing regime of SOBC grants after controlling for banks' potential growth rate is also significantly higher in the US banks compared with EU banks.

5.5.3 Variation in traditional banking activities and the impact of SOBC expenses

This section investigates whether the materiality level of the impact of IFRS2/FAS123R on selected performance measures varies according to the difference in banks' organisational structure and diversity in traditional banking activities between US and EU banks. Stiroh (2004) and Avraham *et al*. (2012) documented a notable movement of banks' activities towards engaging more in non-traditional banking activities such as securities underwriting and trading and selling insurance products. Changes in the regulatory environment is one of the main reasons, such that banks registered as Bank holding companies (BHCs) are allowed to expand their traditional banking activities, to a certain limit, and engage whether directly or indirectly in other related banking activities (Aharony and Swary 1981, Avraham *et al*., 2012). Therefore, it would be relevant to investigate whether the impact on IFRS2/FAS123R on the selected measures also varies, as a result of difference in the organisational structure (classification to commercial and bank-holding companies) and as a result of the movement toward diversifying the traditional banking activities. Table (10) presents that effect of

IFRS2/FAS123R after controlling for the difference in banks' classification for commercial and bank-holding banks[5]. It shows that the effect of IFRS2/FAS123R on the selected measure varies significantly between BHCs and commercial banks (CBs) in each block separately[6]. It also shows that the impact of the mandatorily expensing regime of SOBC, and after controlling for banks' organizational structure is also significantly higher in the US banks compared to its EU counterpart for the majority of the selected performance measures.

Furthermore, in the EU sample, the effect appears to be around the materiality threshold used in earlier studies in both BHCs and CBs. Yet the impact is more likely to be higher in BHCs compared to that in CBs. By contrast, the effect on US banks is slightly higher than the materiality threshold used in earlier studies irrespective to their organizational structure, BHCs and CBs. Having said that, The T and U tests' results indicate that the impact is still more likely to be higher in CBs. This suggests that the effect of SOBC expensing significantly varies in the US and EU samples according to banks organizational structures. Interestingly, the effect in the EU sample is higher in banks that are classified as BHCs and more engaged in non-traditional commercial banking activities. To investigate this issue more, each of the EU and US BHCs has been divided into two separate sub-samples, based on the median of banks' average net loan to total assets as a proxy for the variation in traditional banking activities where loan and interest income play a key role.

[5] The classification of banks to commercial bank and bank-holding companies is adopted from the BankScope Database.
[6] Both the T and U test indicate that impact is higher in BHCs. The U test shows that the effect is significantly higher in BHCs. T test also indicate that the effect is higher in BHCs, yet it is insignificant using on some performance measure measures.

Table 10: The impact of IFRS2/FAS123R on selected financial measures (Specialisation and variation of traditional banking activities' effect).

Financial ratios [α]	Classification	EU Banks			US banks			U Test	T Test	(BHCs) Net Loan/TA	EU Banks			US banks			U Test	T Test
		mean	median	SD	mean	median	SD	Z	T		mean	median	SD	mean	median	SD	Z	T
Eearning per share (Diluted) [b]																		
Differences as a percentage of reported DEPS	BHCs	4.81	2.83	5.31	8.34	5.01	10.8	-3.73***	-4.42***	Less loans activities	6.14	4.16	6.56	7.81	4.69	10.35	0.99	0.22
	CBs	3.98	1.64	6.05	16.8	6.89	20.73	-6.84***	-4.66***	More loans activities	3.47	2.66	3.24	8.89	5.46	11.24	-7.01***	-6.49***
U test, (Z)			3.35***			-2.92**						1.63*			-1.63			
T test, (T)			1.06			-3.07***						2.22**			-1.06			
Return on assets (ROA)																		
Differences as a percentage of reported ROA	BHCs	4.08	2.43	4.37	8.74	4.91	14.02	-4.82***	-5.64***	Less loans activities	5.42	3.94	5.16	8.31	4.69	13.82	0.49	-1.01
	CBs	3.62	1.64	5.32	15.69	6.99	20.33	-6.89***	-4.54***	More loans activities	2.71	2.02	2.83	9.20	5.29	14.24	-7.13***	-5.45***
U test, (Z)			2.65***			-2.54**						2.51**			-1.39			
T test, (T)			0.71			-2.57**						2.82***			-0.68			
Return on equity (ROE)																		
Differences as a percentage of reported ROE	BHCs	4.08	2.43	4.37	8.74	4.91	14.02	-4.82***	-5.64***	Less loans activities	5.42	3.94	5.16	8.31	4.69	13.82	0.49	-1.01
	CBs	3.62	1.64	5.32	15.69	6.99	20.33	-6.89***	-4.54***	More loans activities	2.71	2.02	2.83	9.20	5.29	14.24	-7.13***	-5.45***
U test, (Z)			2.65***			-2.54**						2.51**			-1.39			
T test, (T)			0.71			-2.57**						2.82***			-0.68			
Cost to income ratio (CIR)																		
Differences as a percentage of reported CIR	BHCs	1.43	0.82	1.49	2.05	1.58	1.7	-4.60***	-3.54***	Less loans activities	2.03	1.41	1.68	1.97	1.41	1.73	-0.96	-1.44
	CBs	0.85	0.53	0.97	2.57	1.92	2.12	-7.75***	-7.25***	More loans activities	0.75	0.55	0.84	2.13	1.65	1.66	-6.18***	-4.52***
U test, (Z)			2.92***			-1.53*						3.75***			-1.84*			
T test, (T)			3.38***			-2.18**						4.66***			-1.12			
SOBC expense as a percentage of opening shareholders' equity	BHCs	0.72	0.40	0.87	0.64	0.48	0.65	-1.31	0.80	Less loans activities	0.88	0.46	0.90	0.64	0.48	0.61	1.73*	2.41**
	CBs	0.41	0.20	0.66	0.75	0.57	0.61	-6.96***	-4.30***	More loans activities	0.53	0.27	0.81	0.64	0.48	0.68	-6.57***	-2.96***
U test, (Z)			3.75***			-1.94*						2.17**			0.02			
T test, (T)			2.97***			-1.66*						1.91**			0.11			

[α] All figures are reported for the post-adoption years combined.

[b] :ROA, ROE and DEPS are reported in cents

The U and the T tests' results indicate that the effect of FAS123R on the selected performance measures in US BHCs does not vary significantly after controlling for variation in traditional banking activities. For example, SOBC expense relative to opening shareholders' equity does not vary significantly between all US sub-groups, yet it is still around its traditional materiality threshold in all sub-groups. This suggests that effect of SOBC expensing in the US sample is material in all sub-groups, irrespective to their organizational structure and the degree of variation in traditional banking activities. By contrast, the effect of IFRS2 on the selected measure is significantly higher in EU's BHCs that engage more in other diversified banking activities. Diversified banking activities also imply more complex banking portfolio (Pendleton *et al.*, 2002), and therefore more tendency to use SOBC packages.

5.6 Additional analysis

This section provides an additional and supplementary analysis for the previous section on the impact of the mandatory expensing of SOBC on selected financial performance measures of EU and US sample banks. The analysis is extended to control for the legal tradition under which the sample-banks operate. It compares and evaluates the impact on the financial performance measures of banks domiciled in codified-law countries versus those domiciled in common law countries. The total impact is also reported after controlling for different characteristics of banks, banks' size and banks' potential growth, along with banks' operational structure or differences in banking activities.

Table (11, A) shows that average impact of the mandatory adoption of expensing SOBC on the selected performance measures in banks that operate in codified-law countries falls a little below the 5 % materiality thresholds for ROA, ROE and DEPS. For the rest of the

selected financial indicators, the average impact is around the materiality thresholds. Table (11, A) also shows that the average effect falls above the materiality thresholds for all the selected performance measures of banks that operate on common-law countries, and it is more than twice of that in those operate in codified law countries. Earlier studies suggested that the agency problem and information asymmetry is more apparent in reporting environment whose corporate governance typically focuses on firm's shareholders as a result of the lack in the shareholder-manager direct contact (See Ball *et al.*, 2000). As such, to alleviate the agency cost, agents, particularly top managements, in common-law countries such as the US, UK, and Ireland tend to be monitored often by means of SOBC. Whereas, in countries with codified legal tradition such as Germany, agents such as employees and managers are influential stakeholders whose pay-out is internalized to a certain extent with other stakeholders. Furthermore, the advantages of closer shareholder-manager contact in code-law countries also making it less likely to heavily depend on SOBC since the managers' payout packages are less likely to be focused on current or future profitability. In consistent with view, the findings suggest that the impact of IFRS2/FAS123R on financial performance measures of banks that operate in common law countries is noticeably larger than that in banks operate in codified-law countries.

Table 11 Panel (A) The effect of SOBC expensing on selected financial measures in codified versus common law countries

Financial ratios [b]	Codified law countries				Common law countries				Total			
	N	mean	median	S.D	N	mean	median	S.D	N	mean	median	S.D
Return on assets (ROA)												
Difference [α]	228	0.01	0.01	0.02	655	0.06	0.04	0.04	883	0.04	0.03	0.04
Differences as a percentage of reported ROA	209	3.32	1.69	4.82	556	9.35	4.97	14.56	765	7.69	3.96	12.98
Return on equity (ROE)												
Difference	228	0.31	0.19	0.39	655	0.61	0.48	0.49	883	0.54	0.40	0.50
Differences as a percentage of reported ROE	209	3.32	1.69	4.82	556	9.35	4.97	14.56	765	7.69	3.96	12.98
Eearnings per share (Diluted)												
Difference	228	9.52	1.59	22.6	655	9.76	6.21	9.87	883	9.33	5.26	12.57
Differences as a percentage of reported EPS (Diluted)	207	3.81	1.94	5.56	545	9.06	5.25	12.02	752	7.67	4.06	11.15
Cost to income ratio												
Difference	228	0.46	0.32	0.49	655	1.32	0.99	1.12	883	1.10	0.77	1.06
Differences as a percentage of reported CIR	228	0.73	0.52	0.73	655	2.15	1.63	1.78	883	1.79	1.24	1.69
SOBC expense as a percentage of opening shareholders' equity	228	0.40	0.20	0.66	655	0.68	0.50	0.67	883	0.61	0.42	0.68

[α] Difference is calculated as an absolute difference between used ratios adjusted for SOBC expenses and those reported in the annual financial reporting. The difference is measured in cents while other differences are measured in percentages. However, differences as a percentage is calculated as follow: ratios adjusted for SOBC expenses minus reported ratio and the difference is divided by reported ratio.

[b] All figures are reported for the post-adoption years combined and winsorised at 2%. Return on assets (ROA) is profit after tax and extraordinary items to average total assets. Diluted earnings per share (DEPS) is measured by profit attributable to equity shareholders to the weighted average numbers of shares on issue plus dilution shares. Return on equity (ROE) is calculated as net profit after tax divided by average shareholders' equity excluding non-controlling interests. Cost to income ratio (CIR) is a bank's operating costs relative to its total net interest and non-interest income (Christian, *et al*., 2008).

Table (11): Panel (B) The impact of SOBC expensing on selected financial measures according to banks' size and earnings growth opportunities in codified versus common law countries.

Financial ratios [a]	Size	Codified law Banks			Common law banks			U Test	T Test	Growth	Codified law Banks			Common law banks			U Test	T Test
		Mean	%50	SD	Mean	%50	SD	Z	T		Mean	%50	SD	Mean	%50	SD	Z	T
Earnings per share (Diluted) [b]																		
	Q1	3.66	1.95	5.44	10.24	3.01	16.37	-3.55***	-3.92***	Q1	3.88	2.58	4.55	6.17	3.51	8.78	-3.42**	-1.80*
	Q2	3.03	1.63	4.80	8.31	5.37	10.53	-6.54***	-4.99***	Q2	3.51	1.08	5.46	7.39	4.47	9.05	-5.06***	-3.41***
Differences as a percentage of reported DEPS	Q3	2.57	2.03	2.91	8.38	5.47	10.53	-6.36***	-6.02***	Q3	2.58	1.68	4.37	8.45	5.61	10.37	-6.68***	-5.35***
	Q4	6.17	2.13	7.62	9.59	6.80	10.28	-3.68***	-2.41**	Q4	4.93	2.11	6.99	15.50	8.87	17.22	-6.25***	-6.76***
Kruskal- Wallis, Chi squared (X^2)			6.13*			20.77***						6.82*			47.88***			
ANOVA, F -value			4.39**			0.82						1.61*			16.30***			
Return on assets (ROA)																		
	Q1	3.01	1.95	5.44	11.15	3.01	20.50	-3.58***	-4.20***	Q1	3.34	2.15	4.55	6.54	3.41	13.77	-3.23**	-1.62**
	Q2	2.63	1.22	4.57	8.10	5.27	10.40	-7.41***	-5.32***	Q2	3.22	1.03	5.71	8.42	4.55	13.27	-7.05***	-3.60***
Differences as a percentage of reported ROA	Q3	2.44	1.74	2.73	8.32	5.59	12.31	-6.65***	-5.46***	Q3	2.07	1.65	2.45	8.48	5.55	12.40	-6.05***	-6.03***
	Q4	5.40	2.05	6.69	10.26	6.67	14.27	-4.20***	-3.10**	Q4	4.36	1.95	5.93	15.03	7.65	17.65	-6.55***	-6.95***
Kruskal- Wallis, Chi squared (X^2)			6.97*			23.71***						8.21**			46.59***			
ANOVA, F -value			4.28**			1.41						1.98*			8.86***			
Return on equity (ROE)																		
	Q1	3.01	1.95	5.44	11.15	3.01	20.50	-3.58***	-4.20***	Q1	3.34	2.15	4.55	6.54	3.41	13.77	-3.23**	-1.62**
	Q2	2.63	1.22	4.57	8.10	5.27	10.40	-7.41***	-5.32***	Q2	3.22	1.03	5.71	8.42	4.55	13.27	-7.05***	-3.60***
Differences as a percentage of reported ROE	Q3	2.44	1.74	2.73	8.32	5.59	12.31	-6.65***	-5.46***	Q3	2.07	1.65	2.45	8.48	5.55	12.40	-6.05***	-6.03***
	Q4	5.40	2.05	6.69	10.26	6.67	14.27	-4.20***	-3.10**	Q4	4.36	1.95	5.93	15.03	7.65	17.65	-6.55***	-6.95***
Kruskal- Wallis, Chi squared (X^2)			6.97*			23.71***						8.21**			46.59***			
ANOVA, F -value			4.28**			1.41						1.98*			8.86***			
Cost to income ratio (CIR)																		
	Q1	0.71	0.46	0.73	1.95	1.01	2.10	-4.62***	-6.31***	Q1	0.82	0.61	0.77	1.83	1.27	1.49	-5.40***	-8.19***
	Q2	0.51	0.38	0.51	2.16	1.66	1.66	-9.57***	-11.6***	Q2	0.64	0.25	0.80	2.29	1.69	1.98	-7.21***	-8.33***
Differences as a percentage of reported CIR	Q3	0.60	0.54	0.46	2.05	1.69	1.56	-7.80***	-10.6***	Q3	0.46	0.38	0.41	2.43	1.74	1.99	-8.25***	-12.1***
	Q4	1.13	0.80	0.99	2.47	1.81	1.72	-5.77***	-7.04***	Q4	0.91	0.77	0.78	2.29	1.69	1.98	-6.31***	-6.07***
Kruskal- Wallis, Chi squared (X^2)			13.73**			29.29***						15.91**			7.38*			
ANOVA, F -value			9.15***			2.61*						4.30***			3.86**			
	Q1	0.31	0.18	0.36	0.54	0.35	0.71	-3.47***	-3.02**	Q1	0.31	0.23	0.38	0.70	0.47	0.66	-3.19**	-5.84***
Option expense as a percentage of opening shareholders'	Q2	0.31	0.12	0.57	0.61	0.50	0.45	-7.04***	-3.89***	Q2	0.41	0.08	0.70	0.52	0.48	0.38	-4.33***	-1.09
equity	Q3	0.23	0.19	0.21	0.63	0.48	0.64	-6.30***	-6.98***	Q3	0.18	0.12	0.18	0.79	0.55	0.87	-7.43***	-8.50***
	Q4	0.75	0.27	1.04	0.96	0.65	0.77	-4.22***	-1.38	Q4	0.65	0.26	0.96	0.70	0.53	0.63	-5.85***	-0.37
Kruskal- Wallis, Chi squared (X^2)			11.49**			59.92***						16.44***			6.70*			
ANOVA, F -value			7.93***			13.5***						5.62***			4.53**			

[a] All figures are reported for the post-adoption years combined

[b] .ROA, ROE and DEPS are reported in cents

Table (11): Panel (C) The impact of SOBC expensing on selected financial measures in codified versus common law countries according to banks' specialisation and variation of their traditional banking activities

Financial ratios [α]	Classification	Codified law Banks			Common law banks			U Test	T Test	(BHCs) Net Loan/TA	Codified law Banks			Common law banks			U Test	T Test
		Mean	%50	SD	Mean	%50	SD	Z	T		Mean	%50	SD	Mean	%50	SD	Z	T
Eearning per share (Diluted) [b]																		
Differences as a percentage of reported DEPS	BHCs	2.81	2.21	2.68	8.29	5.12	10.5	-5.66***	-8.79***	Less loans activities	2.16	2.05	1.12	7.73	4.59	10.11	-4.72***	-8.20***
	CBs	4.09	1.64	6.10	14.54	5.92	19.10	-6.04***	-4.38***	More loans activities	3.70	2.75	3.79	8.90	5.53	10.83	-3.12***	-4.62***
U test, (Z)			0.97			-1.52						-1.49			-1.97**			
T test, (T)			-2.05**			-2.61**						-1.72*			-1.22*			
Return on assets (ROA)																		
Differences as a percentage of reported ROA	BHCs	2.28	1.79	2.30	8.63	4.93	13.62	-6.79***	-9.03***	Less loans activities	2.18	1.75	1.58	8.06	4.62	13.33	-4.88***	-6.58***
	CBs	3.61	1.63	5.28	14.51	6.64	19.43	-6.36***	-4.55***	More loans activities	2.41	1.84	3.09	9.24	5.47	13.92	-4.58***	-5.94***
U test, (Z)			0.16			-1.56						-0.46			-1.83*			
T test, (T)			-2.50**			-2.41**						-0.30			-0.95			
Return on equity (ROE)																		
Differences as a percentage of reported ROE	BHCs	2.28	1.79	2.30	8.63	4.93	13.62	-6.79***	-9.03***	Less loans activities	2.18	1.75	1.58	8.06	4.62	13.33	-4.88***	-6.58***
	CBs	3.61	1.63	5.28	14.51	6.64	19.43	-6.36***	-4.55***	More loans activities	2.41	1.84	3.09	9.24	5.47	13.92	-4.58***	-5.94***
U test, (Z)			0.16			-1.56						-0.46			--1.83*			
T test, (T)			-2.50**			-2.41**						-0.30			-0.95			
Cost to income ratio (CIR)																		
Differences as a percentage of reported CIR	BHCs	0.55	0.49	0.49	2.11	1.63	1.71	-8.76***	-15.9***	Less loans activities	0.51	0.45	0.44	2.04	1.46	1.72	-6.95***	-12.0***
	CBs	0.78	0.53	0.79	2.40	1.64	2.09	-7.60***	-7.44***	More loans activities	0.63	0.60	0.55	2.18	1.69	1.71	-5.28***	-9.83***
U test, (Z)			-1.28			-0.38						-0.56			-1.57			
T test, (T)			-2.58**			-1.29						-0.86			-0.96			
Option expense as a percentage of opening shareholders' equity	BHCs	0.35	0.24	0.61	0.68	0.50	0.68	-5.91***	-3.80***	Less loans activities	0.20	0.22	0.18	0.72	0.50	0.70	-5.6***	-9.87***
	CBs	0.41	0.19	0.68	0.71	0.52	0.60	-6.13***	-3.69***	More loans activities	0.59	0.28	0.92	0.64	0.50	0.66	-1.87*	-0.26
U test, (Z)			0.11			-0.64						-1.54			0.65			
T test, (T)			-0.65			-0.39						-1.88*			1.37			

[α] All figures are reported for the post-adoption years combined

[b] .ROA, ROE and DEPS are reported in cents

Table (11, B) also indicates that the material effect of mandatory recognition regime of IFRS2/FAS123R on the selected performance measures of banks is noticeably confined to larger and higher potential growth banks across all the legal traditions under which banks operate. The Kruskal-Wallis test and its comparative one-way analysis of variance (ANOVA) indicates that the impact of IFRS2/FAS123R adoption on the selected measures varies significantly between banks according to their size and potential growth opportunity and after controlling for the legal tradition under which they operate. That is, the larger or the higher potential growth is the bank, the more is the impact on its financial performance indicators. Earlier studies, (such as Core and Guay, 2005; Melissa, 2004) have found evidence that firm size has a positive and significant relationship with the use of SOBC grants. Again, this might intuitively be due to the fact that the larger or the higher earnings growth the bank is, the more heavily it adopts SOBC grants where the number of issued grants is a major factor that plays a key role in determining the recognised expense and therefore on its effect on the selected measures.

The T test and its comparative U test also indicates that the impact of IFRS2/FAS123R adoption on the selected measures varies significantly between banks according to the legal tradition under which they operate and after controlling for their size and potential growth opportunity separately. The findings suggest that the impact of IFRS2/FAS123R on financial performance measures of banks that operate in common law countries is significantly higher than that in banks that operate in codified law countries, and after controlling for each of banks' size and earnings growth opportunities.

Finally, table (11, C) shows that the effect of IFRS2/FAS123R on the selected financial performance measures appears to be slightly below the utilised materiality threshold in both

BHCs and CBs that operate in a codified-law countries. By contrast, the effect on the selected performance measures of banks that operate in common-law countries is slightly higher than the materiality threshold used in earlier studies across all banks' organizational structures, BHCs and CBs. The T and U tests show that the impact of expensing the fair value of SOBC and after controlling for banks' organizational structure is also significantly higher in banks that operate in common law countries compared to those operating in codified law countries. Table (11, C) shows that the effect of IFRS2/FAS123R on the selected financial performance measures is more likely to be higher in CBs. Yet the results of T and U tests indicates that this effect does not seem to vary significantly among banks according to their operational structure and variation in banking activities and after controlling for the legal tradition under which they operate[7]. This result is also confirmed using the loan activities criteria used to partition the sample according to the traditional banking activities.

5.7 Summary

This chapter presented and discussed the findings of identifying, comparing, and evaluating the total effect of mandatory expensing of SOBC on selected performance measures for an international sample of US and EU banks. The impact is also analysed and evaluated over a warranted longer period (2004-2011) to reflect the influence of factors, such as option life cycle, management discretion, and structure of the recognised SOBC expense, on the yearly individual effect behaviour. Overall, the findings show that the expensing of SOBC has resulted in statistically significant negative and modest effects on both US and EU banks' selected financial performance measures with the impact is more likely to be higher in the US banking sector. The findings do not reflect earlier research estimations indicating that

[7] The T test indicates that the effect is higher in CBs compared to BHCs for the majority of the selected financial performance measures, yet this difference is insignificant using the U test.

concerns and criticism of the implementation of this standard are largely unsubstantiated. The results also show that banks in both samples, but particularly in the US, had significantly accelerated the vesting condition of SOBC grants to avoid recognising standing unvested grants using the fair value approach in the first-year adoption of IFRS2/FAS123R (Choudhary *et al*., 2009). There is also evidence of a modest reduction in the changes of the selected performance measures over the period, 2004-2005 for EU banks and 2005-2006 for US banks, due exclusively to the mandatory introduction of IFRS2/FAS123R.

Option life cycle, management discretion and structure of the recognised SOBC expense are also found to have their influence on the trend of this effect. The findings also show a considerable movement towards using cash-settled payments, possibly due to their manipulative accounting treatment. In addition, the findings show that the earlier predictions and employees' fears that firms would curtail these SOBC grants to avoid or reduce the mandatorily associated expense came to light after the first option cycle in the post-adoption period was over. Yet the decrease is insignificant, indicating that both the US and EU banks are still using SOBC grants extensively to compensate their employees.

Chapter Six: Findings on the information content, value relevance and reliability of expensing the fair value of SOBC

6.1 Introduction

The second aim of this thesis is to assess whether the recognition approach to expensing SOBC is more value relevant for investors' valuation than the disclosure approach. It also assesses whether the recognition approach to expensing the fair value of SOBC better reflects the intangible value attributable to SOBC relative to that under the disclosure approach. The accounting information is considered value relevant when it has a statistical association with equity return (Barth el al., 2001). Furthermore, SOBC schemes are usually designed to motivate employees and manager and drive companies' future performance over the long-term. The willingness of those talented managers and employees to be compensated based on the long-term future performance and service is associated with an extra market risk factor. Market participants are expected to compensate the associated expense of SOBC compared to other operating expenses such as salaries or bonuses which are paid based on the past services or performance. That is, SOBC expense is expected to be viewed as an intangible asset that contributes to a better future value of companies. The extent to which differences in the financial reporting environment significantly influence the value relevance and the intangible value attributable to SOBC, prior versus after IFRS2/FAS123R adoption, is also assessed in this chapter.

The next section presents the descriptive statistics for the sample banks. The selected banks operate in a wider international setting that adopted IFRS2/FAS123R, and heavily use or recently increased the utilisation of SOBC in their reward schemes. The third section presents the findings, using prior IFRS2/FAS123R adoption data. The discussion mainly highlights

the direction and magnitude of market valuation to the accounting treatment and measurement of the cost associated with SOBC grants, and across different institutional environments. The fourth section presents and discusses the findings of whether the recognition approach to expensing SOBC is incrementally useful to market participants compared to that under the disclosure approach. The discussion also highlights whether the recognition approach to expensing SOBC better reflects the intangible value attributable to SOBC schemes than that under the disclosure approach. This section also presents the results of the extent to which differences in the institutional reporting settings influence the value relevance and intangible feature attributable of SOBC prior versus after the mandatory adoption of IFRS2/FAS123R. The fifth section of this chapter presents the findings using post IFRS2/FAS123R adoption data. The analysis highlights the direction and magnitude of market valuation to the accounting treatment and measurement of the cost of SOBC schemes under the recognition approach, and across different institutional environments. The sixth section presents the findings of the impact of bank characteristics on the relationship between the recognised expense of SOBC and market returns. The characteristics of banks include size of banks, potential growth rate of investment opportunities and the level of bank risk taking measured by market risk (stock price volatility). The section also presents the findings of whether such an impact varies across banks that operate in different institution reporting settings. Finally, the last section of this chapter concludes.

6.2 Descriptive statistics

Table (12) presents the descriptive statistics for the sample divided into three groups, the pre-adoption period, the post-adoption period and the full sample.

Table 12 (A): Descriptive Statistics for selected variables of the sample-banks (In millions $)

	Pre adoption			Post adoption			Full sample		
Description	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD
E_{it}	1,321.81	145.89	3,027.03	1,056.67	94.78	3,773.91	1,089.99	101.76	3,687.95
R_{it}%	13.28	12.14	12.83	4.91	-2.24	57.63	5.76	1.51	53.79
ΔE_{it}%	12.43	10.91	13.01	9.63	5.05	26.86	9.98	5.90	25.54
Total Assets	158,38	13,365.4	321,911	297,509	17,440	644,751	280,024	17,065.7	615,187
Market Value	16,051.3	2,347.59	35,577.2	17,233.7	1,993.79	36,239.9	17,085.1	2,005.77	36,140.2
Total SOBC Exp	87.77	7.13	289.94	122.62	5.86	426.74	118.24	5.95	412.09
Rec_it	45.94	0.30	240.536	122.62	5.86	426.74	-	-	-
Dis_it	41.83	3.04	173.347	-	-	-	-	-	-
N	115			800			915		

E_{it}: The total net income before extraordinary items. R_{it} : The annual buy-and-hold stock returns inclusive of dividends and computed over a bank's fiscal year. ΔE_{it}: The year-to-year change in earnings per share. Rec_it: recognised expense of SOBC. Dis_it: disclosed expense of SOBC. Pre-adoption period data has been manually extracted from the first year adoption comparative figures or the pro-forma disclosure regarding the impact of options expense.

The table shows that total expense of SOBC schemes that would have been recognised over the pre-adoption period if the recognition approach was mandated over that period is $87.77 million. 52% of this amount was voluntarily recognised as an expense in the financial statement of 23 US banks. The rest of the amount was reported under the disclosure approach in the financial statements of 92 banks of which 32 are EU banks.

Table (12) also shows that over the post adoption period, the sample banks, on average, mandatorily recognised $122.62 million of SOBC expense. Yet this is only an absolute number and it does not imply increasing the use of SOBC over the post-adoption period. Chapter 5 (section 5.5) shows that, in response to the mandatory adoption of IFRS2/FAS123R, there were two apparent reductions in the magnitude of SOBC expense relative to the selected variable. The first reduction appeared in the first-year adoption, mainly to avoid recognising SOBC expense related to standing unvested grants and through accelerating the vesting condition of SOBC grants. The second reduction appeared after the first option cycle (3-5 years) in the post-adoption period is over. Table (12) also presents the average of the net income before extraordinary items [NI], the year-to-year change in

earnings per share, the total assets [TA], the market value [MV], and the annual buy-and-hold stock return inclusive of dividends for the sample banks.

The correlations among main variables in equation (2) are reported in table 12 panel (B).

Table 12, (B): Correlation Matrix

Variable	Rit	Eit	Δ EPS	SOBC Exp
Rit	1	0.064***	0.227***	0.243***
Eit	0.094**	1	0.155***	0.111**
Δ EPS	0.27	0.132**	1	0.147***
SOBC Exp	0.161***	0.014	0.079**	1

Notes:

Data are reported for the Post IFRS2/FAS123R sample.

Pearson correlations are presented in the upper diagonal and Spearman correlations are presented in the lower diagonal.

*, **, *** significant at the 0.01, 0.05 and 0.10 level (two-tailed), respectively.

R_{it}:The annual buy-and-hold stock returns inclusive of dividends and computed after three month of a bank's fiscal year-end.

E_{it}: Net incomes before extraordinary items per share over the fiscal year adjusted for the recognised share-based compensation expenses per share.

$SOBC_{it}$: refers to the mandatorily recognised share-option based compensations expense per share.

$\Delta\ EPS_{it}$: The year-to-year change in EPS.

The results of table 12 (B) indicate low levels of collinearity between variables which suggest an absences of multicollinearity. Gujarati (2009) suggests if the correlation coefficient exceeds 0.8 or 0.9, it would be considered as a serious problem. Collinearity analytics suggest that no variables have a correlation greater than 0.25, indicating that multicollinearity is not a concern[56]. Finally, as expected, there is a significant positive association between returns and earnings recognised by banks.

[56] The multicollinearity is also tested using the variance inflation factor (VIF) and tolerances for all regressions run in this chapter. The VIF and tolerance value (not reported) confirm that there is no multicollinearity between variables before adding the interaction terms.

6.3 Information content of SOBC expenses under the disclosure approach

Table (13) presents the regression results of equation (2) that tests the value relevance and information content of disclosed and voluntarily recognised expense of SOBC over the pre-IFRS/FAS123R adoption period. Barth et al. (2001) point out that the accounting information is considered value relevant when it has a statistical association with equity return. The first column R_it (1) presents the regression results of equation (1). It shows that stock return is significantly associated with earnings from operations and is also significantly associated with a firm's earning growth (Ohlson, 1995; Feltham and Ohlson, 1996). This finding is consistent across all model variations and clearly implies that investors use these accounting information numbers in their valuation of the company. This finding is also consistent with that of similar studies such as Aboody *et al*. (2004a), Rees and Stott (2001) and Niu and Xu (2009).

The regression results of equation (2) are presented in column (2). Across all model variations from columns (2) to (7), the (voluntarily) recognised expense of SOBC is entered in the models as one of the earnings components. If banks did not voluntarily recognise any SOBC expense, a zero value is assigned. Furthermore, the disclosed SOBC expense is entered into the regressions across column (2) to (7) as a negative value (expense). The finding from the model in column (2) suggests that while market participants assigned positive value to the voluntarily recognised expense of SOBC, they perceived the disclosed expense of SOBC as an expense that negatively affect the stock return.

Table 13: The information content of SOBC expense using pre-adoption data:

$R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_2\, E_{it} + \alpha_3\Delta\, E_{it} + \alpha_4 Rec_{it} + \alpha_5 Dis_{it} + \alpha_6 Inv\_prot_{jt} + \alpha_7 Dis_{it} *$

$Inv\_prot_{jt} + e_{it}$ *(3)*

Description	$R_{it}(1)$	$R_{it}(2)$	$R_{it}(3)$	$R_{it}(4)$	$R_{it}(5)$	$R_{it}(6)$	$R_{it}(7)$
E_it	1.45***	1.53***	1.38**	1.56***	1.42**	1.52***	1.44**
	(0.51)	(0.50)	(0.54)	(0.57)	(0.55)	(0.53)	(0.55)
Δ E_it	0.325***	0.317***	0.320***	0.309***	0.320***	0.312***	0.311***
	(0.105)	(0.108)	(0.110)	(0.0846)	(0.108)	(0.109)	(0.109)
Rec_it		4.40	6.10	6.90	5.27	6.71	6.25
		(6.81)	(6.95)	(7.36)	(6.85)	(7.07)	(6.99)
C_Dis_it1		-3.70	-5.88	-6.80	-4.33	-5.06	-4.75
		(3.80)	(4.47)	(5.74)	(3.64)	(3.74)	(3.68)
LT * C_Dis_it			-13.56**				
			(6.30)				
USA * C_Dis_it				-16.31**			
				(7.13)			
ASD * C_Dis_it					-29.10**		
					(14.37)		
DRI * C_Dis_it						-3.37***	
						(12.31)	
SOIP * C_Dis_it							-4.62**
							(1.93)
Constant	-0.024	0.0461	0.003	-0.029	-0.053	-0.133**	-0.078
	(0.056)	(0.058)	(0.065)	(0.063)	(0.062)	(0.06)	(0.064)
Year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	21%	21%	23.3%	23.4%	24.1%	27.4%	24.5%
N	115	115	115	115	115	115	115

Standard errors in parentheses are based on robust standard errors.*p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock returns inclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share are computed as total net income before extraordinary items divided by the number of common shares outstanding. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. Rec_it: recognised expense of SOBC scaled by the stock price at the beginning of the fiscal year. Dis_it: disclosed expense of SOBC scaled by the stock price at the beginning of the fiscal year. C_Dis_it: disclosed expense of SOBC centered by the average mean of disclosed expense and scaled by the stock price at the beginning of the fiscal year. Pre-adoption period data has been manually extracted from the first year adoption comparative figures or the pro-forma disclosure regarding the impact of options expense. All market and accounting measures are winsorised at 2%. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) a country's legal tradition (1= common law; 0 = code law) based on La Porta *et al*. (1997), Ball *et al*. (2000) (2) the US economy =(1) versus the remaining countries =(0); (3) [ASD]the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample.; (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year.* shows the interaction effects between two variables.

Zhang (2005) suggests that one potential reason for such a difference in investor valuation could be the differential informational efficiency in the presence of information costs (See also Barth *et al*., 2003).

Consistent with Niu and Xu (2009), this implies that voluntarily recognition of SOBC expense in the income statement mitigates the negative impact of SOBC on stock returns. This evidence is, however, inconsistent with that of Balsam *et al.* (2006) who suggested that market participants value the cost associated with SOBC as an expense whether it is recognised in the income statements or disclosed in the footnotes.

Furthermore, both coefficients on recognised and disclosed SOBC expense are insignificant. The insignificant reaction of market participants to both amounts, suggest concrete evidence about the self-selective incentive of these banks to voluntarily recognise or to disclose this cost. The self-selective incentive to disclose or to recognise, also might affected the value relevance and reliability of the information content of SOBC expense.

The regression results of equation (3) are presented in column (3-7) and using different proxies for country-level institutional variables. The results show that the coefficients of the interaction term between the disclosed expense of SOBC and these proxies is significantly negative. For example, the interaction term LT * C_ Dis_it column (3) suggests that the degree to which investors perceive the disclosed amount of SOBC as an expense is significantly higher in banks that operate in countries with legal tradition classified as common law compared to that in code-law countries. The interaction term US * C_ Dis_it is also significantly negative (column 4). This indicates that disclosed expense of SOBC is generally perceived by market participants in the sample banks as an expense. Yet the degree to which market participants perceive this cost as an expense is significantly more apparent

in the US market (Aboody, 1996; Chamberlain and Hsieh, 1999; Li, 2003; Aboody *et al*., 2004a). Finally, the results are also robust across all the rest of the variables used as proxies to the level of investor protection (ASD, DRI, and SOIP). That is, the negative association between the disclosed expense of SOBC and stock returns was significantly more apparent in a reporting environment characterized by a higher level of investor protection. One possible reason for such findings is that SOBC grants issued in reporting environment characterized by a relatively high level of investor protection or a higher demand for disclosure, are used more effectively to reduce agency costs and are more likely to be subject to a lower level of management discretion.

Overall, the findings show that over the pre adoption period, valuation coefficients on voluntarily recognised SOBC expenses were insignificantly positive (asset), whereas the valuation coefficients on disclosed SOBC were insignificantly negative (expense). The variation in the country-level institutional variables also significantly influences investor valuation for the disclosed expense of SOBC. The valuation coefficients on the disclosed fair value amount of SOBC were significantly more negative (expense) in banks that operate in financial reporting environment characterized by a relatively high level of investor protection or a higher demand for disclosure.

6.4 Information content of SOBC expenses: Pre- versus Post-IFRS2/FAS 123R Analysis

Table (14) presents the results of to what extent mandating SOBC expensing under IFRS2/ FAS123R has resulted in providing more relevant and reliable information to market participants.

Table 14: The information content of SOBC expense: pre vs post IFRS2/FAS123R adoption:

$$R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{01,i}C_j + \alpha_1 E_{it} + \alpha_2\Delta E_{it} + \alpha_3 SOBC_{it} + \alpha_4 Post + \alpha_5 Post * SOBC_{it} + \alpha_6 Inv_{prot_{jt}} + \alpha_7 SOBC_{it} * Inv_{prot_{jt}} + \alpha_8 Post * Inv_{prot_{jt}} + \alpha_9 Post * SOBC_{it} * Inv_{prot_{it}} + e_{it} \quad (4)$$

Description	R_it (1)	R_it (2)	R_it (3)	R_it (4)	R_it (5)	R_it (6)	R_it (7)	R_it (8)
E_it	0.34**	0.41***	0.36**	0.37**	0.37**	0.42***	0.37**	0.39***
	(0.155)	(15.10)	(14.93)	(15.09)	(15.09)	(15.22)	(15.25)	(15.16)
Δ E_it	0.239***	0.164***	0.173***	0.157***	0.150***	0.156***	0.159***	0.155***
	(0.049)	(0.048)	(0.048)	(0.048)	(0.048)	(0.049)	(0.049)	(0.049)
SOBC		22.19***	-2.519	-2.733	-4.565	2.734	0.153	8.814
		(2.840)	(8.123)	(9.100)	(15.97)	(12.03)	(16.37)	(15.19)
Post * SOBC			29.04***	26.18***	39.32**	22.70**	33.07**	15.49**
			(8.788)	(9.703)	(17.23)	(12.94)	(17.74)	(15.79)
Post * SOBC * LT				-10.06				
				(21.94)				
Post * SOBC * US					-15.50			
					(20.01)			
Post * SOBC * ASD						34.53		
						(54.24)		
Post * SOBC * DRI							-13.83	
							(43.51)	
Post * SOBC * SOIP								4.003
								(6.872)
Constant	0.0794	0.149	0.0651	0.0246	0.0450	0.0866	0.0568	0.193
	(0.0687)	(0.0680)	(0.0891)	(0.151)	(0.133)	(0.205)	(0.305)	(0.126)
Year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	57.9%	60.6%	61.1%	60.5%	61.1%	60.8%	60.9%	60.3%
N	915	915	915	915	915	915	915	915

Standard errors in parentheses are based on robust standard errors. *p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock returns inclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share are computed as total net income before extraordinary items divided by the number of common shares outstanding. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. SOBC_it: The recognised expense of share-option based compensation scaled by the stock price at the beginning of the fiscal year. In the case of interaction, this expense is centered by the average mean for the ease of interpretation. All market and accounting measures are winsorised at 2%. Post: a dummy variable = (1) post-adoption = (0) pre-adoption period. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protection: (1) a country's legal tradition (0= common law; 1 = code law) based on La Porta *et al*. (1997), Ball *et al*. (2000) (2) the US economy =(1) versus the remaining countries =(0); (3) [ASD]the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample.; (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year. * shows the interaction effects between two variables

The results also provide evidence on whether the recognition approach to SOBC better reflects the intangible value attributable to SOBC than that under the disclosure approach. SOBC schemes are usually designed to motivate employees and managers and to drive companies' future performance over the long-term. The willingness of those talented managers and employees to be compensated based on the long-term future performance and service is associated with extra market risk factor.

Market participants are, therefore, expected to compensate the risk factor of the associated expense of SOBC and to incorporate the recognised expense into price positively. This also implies that SOBC expense is perceived by market participants as an intangible asset that contributes to a better future value of companies in comparison to other operating expenses such as salaries which are paid based on the past services or performance. The extent to which the variation in the institutional factors significantly influences the value relevance and the intangible feature of SOBC, prior versus after IFRS2/FAS123R adoption, is also shown in table (14).

The first column R_it (1) presents the regression results of equation (1). It shows that stock return is significantly associated with earnings from operations and is also significantly associated with a firm's earning growth (Ohlson, 1995; Feltham and Ohlson, 1996). This finding is also consistent across all model variations implying that market participants incorporate accounting information numbers as reliable inputs in their valuation of the company. This finding is also consistent with that reported in similar studies such as Aboody *et al*. (2004a), Rees and Stott (2001) and Niu and Xu (2009).

The regression results of equation (2) are presented in column (2). Across all model variations from columns (2) to (8), the (voluntarily) recognised expense of SOBC in the pre-

adoption period along with mandatory expense of SOBC in the post-adoption period is entered in the models as one of the earnings components. If a bank disclosed any SOBC expense in the pre-adoption period, it is entered into the regressions across column (2) to (8) as a negative value (expense). The finding from the model in column (2) suggests that market participants perceive the cost associated with the SOBC as relevant and reliable amount. They also assign a significant positive value to the fair-value expense of SOBC rewards which are believed to align the incentives of employees with those of shareholders [i.e. as an asset].

Column (3) presents the regression results of equation (2) but after permitting the coefficients on the explanatory variable $[SOBC_{it}]$ to differ across the IFRS2/FAS123R periods $[Post]$. The coefficient on the interaction term in the third model [R_it (3)] between the cost associated with SOBC [SOBC] and the dummy variable [Post] is positive and significant at the 1% level. This indicates that the recognised expense of SOBC in the post-IFRS2/FASB123R periods is significantly more value relevant than that disclosed or voluntarily recognised in the pre-adoption period. Unlike if it is disclosed in the footnote, the recognised expense of SOBC would be under further scrutiny of external auditors. As such, investors' perception to future cash flow might be revised upward to reflect the intangible feature of SOBC on a firm's value. Column (3, table 14) also shows that the coefficient of [SOBC] is negative, yet insignificant. This result suggests that over the pre-adoption period, disclosed and (voluntarily) recognised expense of SOBC is perceived by market participants as an expense, yet not reliably enough to significantly affect the bank's equity value. Consistent with Niu and Xu (2009), the results suggest that mandatory recognitions of SOBC expense significantly mitigate the negative relationship between the fair value expense of

SOBC and stock returns. The recognised expense under the IFRS2/FAS123R is perceived by investors as relevant and reliable amount that reflects the underlying incentives of such rewards and positively affects the banks' equity value. This evidence is, however, inconsistent with that of Balsam *et al.* (2006) who found that market participants value the cost associated with stock options as an expense whether it is recognised in the income statements or disclosed in the footnotes.

The regression results of equation (4) are presented in column (4-8). This equation tests the information content and the value relevance of expensing the fair value of SOBC in the post adoption period compared to that in the pre-adoption period [$(Post * SOBC_{it}$] and using different proxies for country-level institutional variables. The results show that across all the model variations (4 to 8), the coefficients of the interaction term between the recognised expense of SOBC and the post-adoption dummy variable is positive and significant at the 5% level. A caution should be given when interpreting these coefficients where the three-way interaction term is used in these models. For example, the negative coefficients of (SOBC) in columns (4) and (5) indicate that prior to the mandatory adopton of IFRS2/FAS123R, there is a negaitve relationship, yet insignificant, between SOBC expense and market return of banks that operate in coldified law cuntries (-2.73) or in the EU (-4.56). The two-way interaction terms (SOBC * Post) in columns (4) and (5) are positve and significant. This result sugests that the recognised expense of SOBC in the post IFRS2/FASB123R adoption period is significantly more value relevant than that disclosed in the pre-adoption period when the sample banks operate in codified law countries (-2.73+26.18) or in the EU (-4.56+39.32) respectively. This finding aslo indicates that the intangible value attributable to SOBC packages, as value-increasing assets, is significantly

more accentuated (apparent) in the presence of the mandatory recognition relative to disclosure approach, and in banks that operate in codified law countries or in the EU respectively. That is, over the recognition regime, investors assign higher weightings to the incentive features of SOBC grants versus their dilutive associated cost. This finding might also implicitly suggest that the disclosure regime fails to reflect the long-term "intangible" effect of SOBC on the financial statements. Simmilary, the coefficient of (Post * SOBC) in columns (8) is positve (15.49) and significant at the 5% level. This result sugessts that the recognised expense of SOBC in the post IFRS2/FASB123R adoption period is significantly more value relevant than that disclosed in the pre-adoption period when the level of investor protection is moderate. This finding also could suggest that the intangible feature attributable to SOBC schems, as value-increasing assets, is significantly more accentuated (apparent) in the presence of the mandatory recognition relative to disclosure approach, and in banks that operate in a reporting environment with a moderate level of investor protection. This finding is consistent with that of Niu and Xu (2009) who found that the mandatory recognition of expensing SOBC within the Canadian context significantly mitigate the negative relationship between the fair value expense of SOBC and stock returns.

More importantly, the coefficients of the three-way interaction terms across all model variations from columns (4) to (8) are insignificant. This finding suggests that the incremental usefulness of the recognised fair value amount of SOBC and reported under IFRS2/FAS123R is neither confined to the US environment, nor it is significantly affected by differences among the sample countries that adopted this standard. Indeed, mandating the recognition regime to expense the fair value of SOBC has enhanced the perceived value relevance of the accounting information revealed under IFRS2/FAS123R. It has also

mitigated the perception that managers use SOBC opportunistically. The differences in valuation and measurement issues related to the fair value amount of SOBC across countries still exists, yet it is insignificant. One of the important critics of mandating the IFRS2/FAS123R is that using the fair value approach for SOBC valuation might not be reliably enough for investors valuation across different countries. Such a concern does not seem to significantly affect the desired impact of IFRS2/FAS123R in providing more reliable and useful information to international investors. Finally, the intangible feature attributable to SOBC schemes, as value-increasing assets is significantly more accentuated in the presence of the mandatory recognition relative to disclosure. This inference is also robust across all the sample institutional settings that adopted IFRS2/FAS123R.

6.5 Post-IFRS2/FAS 123R Analysis

6.5.1 The effects of the differences in the institutional settings on the information content of the recognised expense of SOBC

This section investigates the influence of the differences in the institutional settings on the value relevance, and on the intangible features attributable to the recognised fair value expense of SOBC for the post IFRS2/FAS123R adoption period. The empirical results are shown in table (15). The estimates of the initial models (equation 1 and 2) are shown in column (1) and (2), whereas the estimates obtained from running the complete model of equation (5) are shown in columns (3–7), using different proxies for the institutional settings that adopted IFRS2/FAS123.

Again, across all model variations from columns (2) to (7), the mandatorily recognised expense of SOBC is entered in the models as one of the earnings components. Consistent with the finding in the previous section, the model in columns (2) shows that there is a positive

and significant relationship between stock returns and the fair-value expense of SOBC recognised consequent to the mandatory adoption of IFRS2/FAS123R. Furthermore, across all conditional models variations from columns (3) to (7), the coefficient on the recognised expense of SOBC expenses is still positive and significant. More importantly, the coefficients on the interaction terms between the recognised expense of SOBC on the one hand, and each of the proxies used to reflect the variation in the intuitional contexts of the selected sample on the other hand are positive, yet insignificant.

For example, the coefficient of the interaction term (LT * SOBC) in model (3) is poitive (0.70), yet insignificant. The insignificant positive value implies that investors assign higher weighting to the intangible feature of SOBC in banks that recognise the sample mean of SOBC expenses, across all the selected levels of legal traditions. The coefficient on the interaction term in the model (4) also has the same scenario mentioned above within the US context compared to that in the EU. The insignificant and the positive value of the coefficients of the interaction terms are also robust across the rest of models variations from (3) to (7).

Table 15: The effects of the differences in the institutional settings on the information content of the recognised expense of SOBC (post IFRS2/FAS123R adoption analysis):

$R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1 E_{it} + \alpha_2\Delta E_{it} + \alpha_3 SOBC_{it} + \alpha_4 Inv\_prot_{jt} + \alpha_5 SOBC_{it} * Inv\_prot_{jt} + e_{it}$ *(5)*

	R_it (1)	R_it (2)	R_it (3)	R_it (4)	R_it (5)	R_it (6)	R_it (7)
E_it	0.359**	0.380**	0.382**	0.340**	0.390**	0.382**	0.386**
	(0.168)	(0.162)	(0.165)	(0.161)	(0.164)	(0.165)	(0.165)
Δ E_it	0.234***	0.166***	0.166***	0.163***	0.159***	0.165***	0.166***
	(0.0543)	(0.0528)	(0.0529)	(0.0527)	(0.0533)	(0.0529)	(0.0529)
SOBC_it		26.44***	26.60***	24.41***	23.72***	23.61***	25.53***
		(3.336)	(3.746)	(4.346)	(4.515)	(7.730)	(5.302)
LT * SOBC			0.703				
			(7.747)				
USA * SOBC				2.847			
				(5.904)			
ASD * SOBC					14.41		
					(15.92)		
DRI * SOBC						3.460	
						(8.431)	
SOIP * SOBC							0.518
							(2.348)
Constant	0.142	-0.058	0.049	0.238***	0.466	0.198	0.048
	(0.088)	(0.089)	(0.087)	(0.064)	(0.502)	(0.190)	(0.087)
Year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	57.6%	60.8%	60.7%	60.1%	60.8%	60.7%	60.7%
N	800	800	800	800	800	800	800

Standard errors in parentheses are based on robust standard errors.*p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock returns inclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share is computed as total net income before extraordinary items divided by the number of common shares outstanding. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. SOBC_it: The recognised expense of share-option based compensation scaled by the stock price at the beginning of the fiscal year. In the case of interaction, the recognised expense of SOBC is centered by the average mean, for the ease of interpretation. All market and accounting measures are winsorised at 2%. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) a country's legal tradition (1= common law; 0 = code law) based on La Porta *et al*. (1997), Ball *et al*. (2000) (2) the US economy =(1) versus the remaining countries =(0); (3) [ASD]the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample.; (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year.* shows the interaction effects between two variables.

The results emphasise the same scenario mentioned above, but within a context characterised by higher level of anti-self-dealing procedures, higher disclosure requirements and higher level of investor protection respectively.

Prior studies highlighted the effect of management opportunism on the recognised expense of SOBC scheme. For example, Aboody *et al.* (2006), and Johnston (2006) provided empirical evidence indicating that managers tend to understate the disclosed and the voluntarily recognised expense of SOBC under FAS 123. Market participants; however, are expected to react according to the relative level of the exercised discretion by managers over the option pricing model input assumptions. The reaction would be also reflected on the weighting assigned to the intangible feature of SOBC relative to their recognised cost. The magnitude of the positive relationship between the recognised expense of SOBC and market returns would therefore be lessened. Prior studies such as La. Porta *et al*. (1997) and Ball *et al*. (2000; 2003) also pointed out that management opportunism is more likely to be higher in an environment characterised by lower level of investor protection (La. Porta *et al*., 1997; Ball *et al.*, 2000; 2003). As such, the differences in level of management opportunism are also expected to influence the magnitude of the positive relationship between the recognised expense of SOBC and market returns. Indeed, the positive values of the interaction terms reported in table (15) suggest that it is more likely that market participants assign higher weightings to the incentive features of SOBC of banks that operate in a context characterised by a higher level of investor protection or a lower level of management opportunism. However, the differences in the level of management opportunism, and the level of investor protections across countries that adopted IFRS2/FAS123R do not seem to significantly

influence the desired impact of this international standard.

Altogether, the results support the stance of the FASB/IASB and indicate that the recognised expense of SOBC in the post-IFRS2/FASB123R periods is significantly more value relevant than that disclosed in the pre-period (Niu and Xu, 2009). As stated earlier in this chapter, SOBC schemes are usually designed to motivate employees and managers and to drive companies' future performance over the long-term. The willingness of those talented managers and employees to be compensated based on the long-term future performance and service is associated with extra market risk factor. Market participants are, therefore, expected to compensate the risk factor associated with SOBC. Market participants incorporate the recognised SOBC expense into price positively as a value-increasing intangible asset. Indeed, the intangible value attributable to the recognised expense of SOBC schemes, as value-increasing assets, is also significantly more accentuated (apparent) in the presence of the mandatory recognition relative to disclosure. Finally, the influence of the differences in the financial reporting contexts on investors' perception to the intangible feature (value-increasing assets) of SOBC is less burdensome after the mandatory adoption of IFRS2/FAS123R.

6.5.2 The effect of firms' characteristics on the information content of the recognised expense of SOBC

6.5.2.1 The effect of banks' size

Table (16) presents the results of investigating the influence of banks' size on the magnitude of the value relevance and the intangible value attributable to the recognised expense of SOBC over the post adoption period.

Table 16: The effect of banks' size on investors' perception to the recognised expense of SOBC, and across different reporting contexts.

$$-R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1 E_{it} + \alpha_2 \Delta E_{it} + \alpha_3 SOBC_{it} + \alpha_4 Size + \alpha_5 SOBC_{it} * Size + \alpha_6 Inv\_Prot_{jt} + \alpha_7 SOBC_{it} * Inv\_Prot_{jt} + \alpha_8 Size * Inv\_Prot_{jt} + \alpha_9 SOBC_{it} * Size * Inv\_Prot_{jt} + e_{it} \quad (6)$$

	R_it (1)	R_it (2)	R_it (3)	R_it (4)	R_it (5)	R_it (6)
E_it	0.374**	0.344**	0.309*	0.333**	0.357**	0.357**
	(0.162)	(0.164)	(0.164)	(0.164)	(0.165)	(0.164)
SOBC	22.11***	42.11***	43.86***	31.26***	34.85***	31.58***
	(4.785)	(10.10)	(10.10)	(6.695)	(10.62)	(7.330)
Δ E_it	0.164***	0.170***	0.172***	0.161***	0.169***	0.169***
	(0.0530)	(0.0529)	(0.0533)	(0.0532)	(0.0530)	(0.0529)
Size*SOBC	7.85**	-26.27**	-12.31*	-8.27	-19.53	-11.71*
	(6.27)	(12.54)	(11.30)	(8.52)	(14.18)	(9.49)
Size*SOBC*LT		44.83***				
		(14.50)				
Size*SOBC*USA			24.55*			
			(14.08)			
Size*SOBC*ASD				93.45***		
				(35.42)		
Size*SOBC*DRI					34.03**	
					(15.80)	
Size*SOBC*SOIP						11.58***
						(4.338)
Constant	-0.0570	-0.0652	-0.0740	0.375	0.157	-0.0645
	(0.0931)	(0.0949)	(0.117)	(0.504)	(0.216)	(0.0937)
Year effect	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	60.8%	61.1%	60.9%	61%	60.9%	61%
N	800	800	800	800	800	800

Standard errors in parentheses are based on robust standard errors. *p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock returns inclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share is computed as total net income before extraordinary items divided by the number of common shares outstanding adjusted for share options expense. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. SOBC_it: The recognised expense of share-option based compensation scaled by the stock price at the beginning of the fiscal year. In the case of interaction, The recognised expense of share-option based compensation is centered by the average mean for the ease of interpretation. Size: a proxy for banks' size (1= if market value of a bank> median of the sample market value, 0= otherwise) [the mean criterion is also used to partition banks' size as robustness check to the median criterion, the results do not change considerably]. All market and accounting measures are winsorised at 2%. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) a country's legal tradition (1= common law; 0= code law) based on La Porta *et al.* (1997), Ball *et al.* (2000). (2) the US economy = (1) versus the remaining countries = (0). (3) [ASD] the anti-self-dealing index from Djankov *et al.* (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample. (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year. * shows the interaction effects between two variables

It also highlights whether such an effect is confined to banks that operate within a context characterised by a higher level of investor protection such the US context, or it similarly prevails over all the sample contexts that adopted IFRS2/FAS123R.

Column (1) presents the regression results of equation (2) but after permitting the coefficients on the explanatory variable [$SOBC_{it}$] to differ across banks' size. Across all model variations from columns (1) to (6), the mandatorily recognised expense of SOBC is entered in the models as one of the earnings components. Table (16) column (1) shows that the coefficient on the recognised expense of SOBC is positive and significant at the 1% level for small banks in the selected sample. The coefficient on the recognise expense of SOBC in the large sample banks is significantly larger compared to that in the small sample banks (22.11 + 7.85) as indicated by the significant positive coefficient of the interaction term (Size *SOBC_it). This finding is consistent with that reported by Niu and Xu (2009).

The estimates obtained from running the complete model of equation (6) are shown in columns (2-6), using different proxies for various institutional factors across the sample countries that adopted IFRS2/FAS123. In column (2), the coefficient on the recognised expense of SOBC for small banks that operate in codified law countries remains positive and significant. The coefficient on the recognised expense of SOBC in the large sample banks that operates in the same context is significantly smaller, yet still positive [= 42.11 – 26.27], compared to that in the small sample banks, as indicated by the value and the significance of the coefficient on (Size *SOBC_it).

More importantly, the influnce of bank's size on the intangible value attributable to the recognised expense of SOBC is significantly more confined to banks that operate in common-law countries, which are to large extent subject to lower level of management

opportunism. That is, the positive effect of banks' size on the value relevance and on the intangible features of the recognised expense of SOBC is more apparent or confined to banks that operate in a context that is characterised by a low level of management opportunism or by a high level of investor protection. This finding is also supported across the rest of the models variations from column (3) to (6). For example, the difference in the intangible value assigned to SOBC expense between large and small banks (Size *SOBC*USA), as indicted in column (3), is significantly larger in those banks that operate in the US context. That is, the positive effect of banks' size on the value relevance and on the intangible incentives of the recognised expense of SOBC is more apparent or confined to banks that operate in the US context. Niu and Xu (2009) also found that firms' size has a positive impact on the value relevance and reliability of the recognised SOBC expenses in the Canadian context. Furthermore, the coefficient on the recognised expense of SOBC in the large sample banks that operates in the EU context is smaller, yet still positive [=43.86- 12.31] but only significance at 10% level, compared that in the small sample banks as indicated by the value and the significance of the coefficient on (Size*SOBC).

The same finding is derived from the rest of the estimations, from column (4) to (6), that utilises many proxies to levels of investor protection [ASD, DRI and SOIP respectively] among countries that adopted IFRS2/FAS123R. Again, this suggests that the effect of banks' size on the value relevance and on the intangible features attributable to the recognised expense of SOBC, is positive and more apparent in banks that operate in the US context or similar contexts that are characterised by high level of investor protection. In other words, large banks that operate in the US context or similar contexts characterised by a high level of investor protection receive more benefits from issuing SOBC grants to their employees

compared to those large EU banks or those banks that operate in a context with lower level of investor protection, respectively. One possible reason for this finding is that larger banks in the US or in other similar contexts have more complex activities (Pendleton *et al.,* 2002) or/and better access to international investment opportunities. As such, investors place more weighting to the incentive features derived from SOBC grants issued in these banks. This issue can also be a potentially interesting area to be investigated in future research.

6.5.2.2 The effect of banks' potential growth and risk-taking

The results of investigating the influence of banks' potential growth opportunity on the value relevance and on the incentive properties of the recognised expense of SOBC and over the post adoption period is presented in table (17). This table also highlights whether such an effect is confined to banks that operate within a context characterised by a higher level of investor protection such the US context, or it similarly prevails over all the sample contexts that adopted IFRS2/FAS123R.

Column (1) presents the regression results of equation (2) but after permitting the coefficients on the explanatory variable $[SOBC_{it}]$ to differ across banks' potential growth. Across all model variations from columns (1) to (6), the mandatorily recognised expense of SOBC is entered in the models as one of the earnings components. Table (17) column (1) shows that the coefficient on the recognised expense of SOBC is positive and significant at the 1% level for low potential growth banks in the selected sample. The direction of this coefficient does not also change significantly for the high potential growth sample banks (30.63 -10.12), compared to that in low potential growth banks as indicated by the insignificant coefficient of the interaction term (Growth rate *SOBC).

Table 17: The effect of banks' potential growth rate on investors' perception to the recognised expense of SOBC, and across different reporting contexts.

$$-R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1 E_{it} + \alpha_2 \Delta E_{it} + \alpha_3 SOBC_{it} + \alpha_4 Growth\_Rate + \alpha_5 SOBC_{it} * Growth\_Rate + \alpha_6 Inv\_Prot_{jt} + \alpha_7 SOBC_{it} * Inv\_Prot_{jt} + \alpha_8 Growth\_Rate * Inv\_Prot_{jt} + \alpha_9 SOBC_{it} * Growth\_Rate * Inv\_Prot_{jt} + e_{it} \quad (6)$$

	R_it (1)	R_it (2)	R_it (3)	R_it (4)	R_it (5)	R_it (6)
E_it	0.359**	0.372**	0.356**	0.375**	0.369**	0.371**
	(0.162)	(0.165)	(0.163)	(0.164)	(0.165)	(0.165)
SOBC	30.63***	31.42***	34.17***	27.79***	28.59***	27.51***
	(4.037)	(4.839)	(6.168)	(5.178)	(8.549)	(5.701)
Δ E_it	0.178***	0.177***	0.163***	0.170***	0.175***	0.178***
	(0.0535)	(0.0537)	(0.0536)	(0.0542)	(0.0537)	(0.0536)
Growth rate*SOBC	-10.12	-10.94	2.097	-13.59	-23.89	-2.863
	(6.280)	(7.147)	(9.189)	(9.990)	(19.84)	(13.41)
Growth rate*SOBC*LT		9.859				
		(18.28)				
Growth rate*SOBC*USA			-21.37*			
			(12.48)			
Growth rate*SOBC*ASD				5.600		
				(31.15)		
Growth rate*SOBC*DRI					14.57	
					(21.01)	
Growth rate*SOBC*SOIP						-3.810
						(5.908)
_cons	-0.086	-0.088	-0.169*	0.392	0.110	-0.097
	(0.091)	(0.095)	(0.100)	(0.559)	(0.219)	(0.093)
Country-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	60.9%	60.8%	61.1%	60.8%	60.7%	60.8%
N	800	800	800	800	800	800

Standard errors in parentheses are based on robust standard errors. *p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock return inclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share is computed as total net income before extraordinary items divided by the number of common shares outstanding adjusted for share options expense. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. SOBC_it: The recognised SOBC expense scaled by the stock price at the beginning of the fiscal year. In the case of interaction, SOBC expense is centered by the average mean of recognised expense for the ease of interpretation. Growth_rate_it: a proxy for banks' growth opportunity (1= if the Market to book value ratio> median, 0= otherwise) [the mean criterion is also used to partition banks' growth opportunity as robustness check to the median criterion, the results do not change considerably]. All market and accounting measures are winsorised at 2%. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) a country's legal tradition (0= common law; 1 = code law) based on La Porta *et al*. (1997), Ball *et al*. (2000)(2) the US economy = (1) versus the remaining countries = (0). (3) [ASD] the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample. (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year. * shows the interaction effects between two variables

The estimates obtained from running the complete model of equation (6) are shown in columns (2-6), using different proxies for various institutional factors across the sample countries that adopted IFRS2/FAS123.

In column (2), the coeficient on the recognised expense of SOBC for low potenial growth banks that operate in common law countries remains positive and significant. This inference does not also change significantly for high potential growth sample banks that operates in the same context (31.42 -10.94), compared to that for low growth banks, as indicated by insignificant coefficient on (Growth rate*SOBC).

More importantly, the coefficient on the three-way interaction terms (Growth rate *SOBC*LT) is insignificant. This suggests that the variation in the level of bank' potential growth does not significantly influence the positive and significant relationship between the recognised expense of SOBC and market returns. This inference is also valid across different reporting settings and supported across the rest of the models variations that use different proxies to the level of investor protection, from column (3) to (6), at the 5% significance level.

That is, the variation in the level of banks' growth seems to have no significant effect on the value relevance and the accretive features of the recognised expense of SOBC. Market particpants precive the recognised expense of SOBC as a value-increasing asset that contributes positively to both low and high potenial grwoth bank valuation. This finding is also robust across all level of investor protection of the context under which the smaple banks operate. This finding is consistent with that of Niu and Xu' (2009) who also found that variation in firms' potential growth did not significantly affect the positive market valuation to the recognised expense of SOBC in the Canadian context. In the US context, Rees and

Stott (2001) suggested that the disclosed expense of SOBC in smaller firms with higher potential growth significantly attract a higher positive weighting from market participants compared to that in larger and more mature firms. They suggested the higher demand of cash at the firms' growth stage as a possible reason for this relationship.

Prior studies have also highlighted that the difference in the business and regulatory environment under which banks operate compared to nonbank counterparts can affect the incentives created by the compensation contract (Chen *et al.*, 2006; Smith and Watts, 1992; Mayers and Smith, 1992). Chen *et al.* (2006) found that inducing a higher risk taking is one of the unique influences of using SOBC in the banking industry. The finding of whether market valuation of the recognised expense of SOBC as a value-increasing asset changes significantly with the level of the market risk of sample banks is presented in table (18). This table also shows the finding of whether such a relationsip prevails or significntly varies across different reporting contexts.

Column (1) presents the regression results of equation (2) but after permitting the coefficients on the explanatory variable [$SOBC_{it}$] to differ across banks' risk-taking. Across all model variations from columns (1) to (6), the mandatorily recognised expense of SOBC is entered in the models as one of the earnings components. Table (18) column (1) shows that the coefficient on the recognised expense of SOBC is positive and significant at the 1% level for low risk banks in the selected sample. More importantly, the significant positive coefficient of the interaction term (Risk*SOBC) is positive and significant at the 1% level

Table 18: The influence of banks' risk taking on investors' perception to the recognised expense of SOBC, and across different reporting environments

$$-R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1 E_{it} + \alpha_2 \Delta E_{it} + \alpha_3 SOBC_{it} + \alpha_4 Risk + \alpha_5 SOBC_{it} * Risk + \alpha_6 Inv\_Prot_{jt} + \alpha_7 SOBC_{it} * Inv\_Prot_{jt} + \alpha_8 Risk * Inv\_Prot_{jt} + \alpha_9 SOBC_{it} * Risk * Inv\_Prot_{jt} + e_{it} \quad (6)$$

	R_it (1)	R_it (2)	R_it (3)	R_it (4)	R_it (5)	R_it (6)
Earning before E/D	0.405**	0.411**	0.379**	0.414**	0.403**	0.408**
	(0.166)	(0.168)	(0.166)	(0.167)	(0.169)	(0.168)
SOBC	15.26***	15.96***	12.14*	3.61*	7.82*	5.68
	(5.42)	(5.88)	(6.39)	(8.66)	(15.70)	(9.79)
Δ E_it	0.159***	0.147***	0.152***	0.146***	0.153***	0.149***
	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)
Risk *SOBC	17.00***	19.07***	17.99**	28.82***	40.81**	27.36**
	(6.437)	(7.304)	(8.443)	(9.938)	(17.94)	(11.46)
Risk *SOBC*LT		14.22				
		(17.87)				
Risk *SOBC* USA			-5.642			
			(13.66)			
Risk *SOBC* ASD				-28.78		
				(34.39)		
Risk *SOBC* DRI					-25.83	
					(19.25)	
Risk *SOBC* SOIP						-3.682
						(5.065)
Const	-0.008	0.004	-0.105	0.256	0.089	-0.003
	(0.092)	(0.094)	(0.108)	(0.504)	(0.212)	(0.092)
Country-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	61%	61.2%	61.1%	61.3%	61%	61.2%
N	800	800	800	800	800	800

Standard errors in parentheses are based on robust standard errors. *p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock return inclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share is computed as total net income before extraordinary items divided by the number of common shares outstanding adjusted for share options expense. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. SOBC_it: The recognised expense of SOBC scaled by the stock price at the beginning of the fiscal year. In the case of interaction, SOBC expense is centered by the average mean of recognised expense for the ease of interpretation. Market risk: (1= if monthly volatility of stock price> median, 0= otherwise) [the mean criterion is also used to partition banks' risk as robustness check to the median criterion, the results (not reported) do not change considerably. Weekly's and daily's volatility are also used as a robustness check for Monthly volatility. The results (not reported) do not change considerably]. All market and accounting measures are winsorised at 2%. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) a country's legal tradition (0= common law; 1 = code law) based on La Porta *et al*. (1997), Ball *et al*. (2000)(2) the US economy = (1) versus the remaining countries = (0). (3) [ASD] the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample. (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year. * shows the interaction effects between two variables.

. Given the positive and significant market valuation to the recognised expense of SOBC in low risk-taking banks, this positive relationship becomes more accentuated (apparent) in more risk-taking banks. That is, the vairaition in the level of bank risk taking seems to significantly effect on the value relevance and the intangible features of the recognised expense of SOBC.

Market values the recognised expense of SOBC of all banks, calclulated using the fair value approach, as a value-increasing asset. The magnitude of this positve relationship become significantly larger in more risk-taking banks. One possible reason for this finding is that market participants convey a positive signal to the market and encourage the risk-taking behavior of management through placing a higher weighting to the incentive features of SOBC issued in risky banks. In the case of banks, shareholders may be inclined to compensate more risk-taking behaviour that increasingly maximises wealth transformation from debt-holders to shareholders.

The estimates obtained from running the complete model of equation (6) are shown in columns (2-6), using different proxies for various institutional factors across the sample countries that adopted IFRS2/FAS123. In column (2), the response coefficient on the recognised expense of SOBC in low risk-taking banks that operate in codified law countries remains positive and significant. The coefficient on the recognised expense of SOBC in high risk taking sample banks that operate in the same context is significantly higher compared to less risk taking banks as indicated by the value and the significance of the coefficient on the interaction term (Risk*SOBC). That is, market values the recognised expense of SOBC as a value increasing asset that contributes to value of low risk-taking banks that operate in codified countries. The positive intangible value attributable to the recognised expense of

SOBC rewards is significantly more accentuated in high risk-taking banks that operate in the same legal setting.

More importantly, the coefficient on the three-way interaction terms in column 2 (Risk *SOBC*LT) is insignificant. This suggests that the variation in the legal tradition under which the sample-banks operate, do not significantly change the pervious inference. That is, the intangible feature of SOBC rewards is significantly more accentuated in high risk-taking banks, and across all the institutional settings under which the sample-banks operate.

This inference is also supported by the rest of the models variations that use different proxies to the level of investor protection, from column (3) to (6), at the 5% significance level. For example, column (3) shows that the coefficient on recognised expense of SOBC of low risk-taking banks that operate in the EU is positive, yet significant only at the 10% level. However, this positive relationship is significantly more accentuated in high risk-taking banks that operate in the EU (SOBC = 12.14+17.99). The coefficient of the three-way interaction term (Size*SOBC*USA), as indicated in column (3), is also insignificant. That is, the positive intangible value attributable to the recognised expense of SOBC rewards is significantly more accentuated in high risk-taking banks, and across the US and the EU sample-banks. The same finding is derived from the rest of the estimations, from column (4) to (6), that utilise many proxies to the differences in the levels of investor protection [ASD, DRI and SOIP respectively] among countries that adopted this standard. Finally, banks' daily and weekly stock volatility are also used as a robustness check of the reported results that utilise banks' monthly stock volatility to proxy banks' risk [the results are reported in appendix C]. The results do not considerably change across all the model variations.

The positive relationship between the level of risk-taking and investors appreciation to the intangible feature of SOBC expense has implications for risk-taking and for the agency problem, particularly in banking sector. There have been many renewed calls for a response from financial institutions and banking sectors' regulators to monitor banks' use of SOBC given their tendency to induce short-term risk taking incentives (Mehran and Rosenberg, 2009). Walker (2009), who later reviewed corporate governance in UK banks, pointed out that their culture of granting share-based incentives is viewed as excessive and it significantly induces short-term risk taking. Similarly, the US Congressional Emergency Economic Stabilization Act in 2008 aimed to limit companies tendency to offer share-based incentives to reduce the probability of "unnecessary and excessive risks that threaten the value of the financial institution" during the period that Treasury holds a debt or equity interest[1]. However, there is no clear and comprehensive definition that provides any clarity of what would entail "unnecessary and excessive risk". Furthermore, not all companies in the US are obliged to apply the provisions of this Act. Only a few banks have been benefited from this Act[2]. Story and Dashed (2009) also documented that banks quickly repaid the received funds to overcome the Act's restrictions, in particular before the 2009 year-end bonuses were determined. That is, the Act fell short of gaining its full advantage where banks withdrew from participating under the Act's restrictions.

6.6 Additional analysis

This thesis covers the period from 2004 to 2011. To ensure that the reported results are not driven by the effect of 2008 financial crisis, the main value relevance adopted models (4 and

[1](See section 11(B) (2/a))

[2] This provision applies only to "financial institutions participating in the Act's Troubled Assets Relief Program ('TARP') if (i) the institution has sold assets under TARP in sales that are not solely direct purchases, and (ii) the amount sold (including direct purchases) exceeds $300 million in aggregate".

5) are also run excluding the 2008 financial crisis period. The reported results do not change considerably (See Appendix B). Furthermore, all the reported results from the all used models in this chapter do not change considerably using the annual buy-and-hold stock returns exclusive of dividends and computed over a bank's fiscal year as a proxy for the market returns (See Appendix A). Indeed, mandating the recognition regime of expensing the fair value of SOBC has enhanced the value relevance and reliability of the accounting information across all the financial reporting contexts that adopted IFRS2/FAS123R. The intangible feature attributable to SOBC expense is also significantly more accentuated in the presence of the mandatory recognition relative to disclosure. Finally, the influence of the differences in the financial reporting contexts on investors' perceptions to the intangible feature of SOBC expense is less burdensome after the mandatory adoption of IFRS2/FAS123R.

6.7 Summary

This chapter presented and discussed the empirical findings of whether the recognition approach to expensing the fair value of SOBC provides more value relevant information that better reflects the intangible value attributable to such rewards than the disclosure approach. The accounting information is considered value relevant when it has a statistical association with equity return (Barth el al., 2001). Furthermore, SOBC schemes are usually designed to motivate employees and managers and to drive companies' future performance over the long-term. The willingness of those talented managers and employees to be compensated based on the long-term future performance and service is associated with extra market risk factor. Market participants are, therefore, expected to compensate the risk factor of the associated expense of SOBC. The findings of whether market participants perceive the

recognised expense of SOBC as an intangible asset that contributes to a better future value of companies is presented and discussed in this chapter. Finally, the chapter presents and discusses the empirical findings of whether the variation in the financial reporting environment significantly influences the value relevance and the intangible value attributable to SOBC expense, prior vs after IFRS2/FAS123R.

The findings of this chapter show that the over the pre adoption period, valuation coefficient on the voluntarily recognised expense of SOBC was insignificantly positive (asset), whereas the valuation coefficient on the disclosed expense was insignificantly negative (expense). The differences in the financial reporting settings had also a significant impact on investor valuation to the disclosed expense of SOBC, calculated using the grant-date fair value approach. The negative relationship between market valuation and the disclosed expense of SOBC was significantly more accentuated in banks that operate in financial reporting environment characterised by a relatively high level of investor protection. Furthermore, the findings show that while the valuation coefficients on the disclosed and the voluntarily recognised expense of SOBC are redundant and insignificant in the pre adoption period, possibly due the self-selection problem, the valuation coefficient on the recognised expense over the post adoption period is positive and significant. This inference is also consistent across all the contexts that adopted this standard, and support the view that recognition versus disclosure matters to market participants worldwide. The findings also support the stance of the FASB/IASB and indicate that the recognised expense of SOBC in the post-IFRS2/FASB123R periods is significantly more value relevant than that disclosed in the pre-period. The intangible value attributable to SOBC expense as a value-increasing asset is

significantly more accentuated (apparent) in the presence of the mandatory recognition relative to disclosure.

Indeed, FAS123R/IFRS2 has achieved the desired aims and increased the reliability and comparability of the fair value of SOBC as important incentive instruments and across all the sample settings that adopted this standard. The influence of the differences in the financial reporting environment on investors' perceptions to the intangible value to SOBC expense is less burdensome consequent to the mandatory adoption of IFRS2/FAS123R. This might also suggest an increased integration across the sample countries over time.

Banks' size was found also to positively increase the value relevant and the intangible value attributable to the recognised expense of SOBC, but only in banks that operate in the US context or other similar contexts that have a relatively high level of investor protection. That is, larger sized banks that operate in the US context or similar contexts characterised by a high level of investor protection receive more benefits from issuing SOBC to their employees compared to those large EU banks or those banks that operate in a context with lower level of investor protection, respectively. This could be due to the complex activities and/or the access for more international investment opportunities, in large banks that operate in the US or other similar contexts. Furthermore, the variation in the level of banks' potential growth seems to have no significant effect on the value relevance and the positive intangible value attributable to the recognised expense of SOBC. Market particpants percieve the recognised expense of SOBC schemes as a value-increasing asset that contributes positively to both low and high potenial grwoth bank valuation. This finding was also found to be valid across all the financial reporting contexts underwhich the sample-banks operate. Finally, investors generally assign an increasing value to the intangible incentives derived from SOBC issued

in high risk-taking banks. That is, the positive intangible value attributable to the recognised expense of SOBC rewards is significantly more accentuated in high risk-taking banks. This inference is also consistent across all the financial reporting contexts under which the sample banks operate. Again, a possible reason that can explain this finding is that market participants convey a positive signal to the market and encourage the risk-taking behavior of management through placing a higher weighting to the incentive features of SOBC issued in riskier banks. This is of a particular importance in the banking sector where shareholders may be inclined to compensate more risk-taking behaviour that increasingly maximises wealth transformation from debt-holders to shareholders.

Chapter 7: Synopsis and Conclusion

7.1 Introduction

This chapter presents the synopsis and the conclusion of the thesis. As we saw in what preceded, this thesis highlights the major financial reporting implications of alternative reporting methods of accounting for SOBC by utilising pre and post adoption data of IFRS2/FAS123R for a single industry, and across a wider global setting, the EU and US banking sectors. The period of the study covers eight years (2004-2011), one year pre IFRS2/FS123R adoption and the rest cover the post mandatorily IFRS2/FAS123R adoption. The thesis predominantly deals with two major streams of accounting research: i) the economic consequences from the mandatory adoption of IFRS2/FAS123R, and ii) the information content and the value relevance of the recognition versus the disclosure approach to expensing the fair value of SOBC.

Firstly, the research objective of the economic consequences part aims to identify, analyse, compare, and evaluate the materiality of the total impact of expensing SOBC on reported earnings and other selected performance measures. A sample of banks that operate across a wider international setting, the US and EU market, and different periods of investigation, pre and post IFRS2/FAS123R adoption, is selected for this research objective.

The second research objective of this thesis is to explore the value relevance and the information content of the recognition versus the disclosure approach to expensing the grant-date fair value of SOBC from the perspective of agency and equity valuation theories. Evidence is provided on the value relevance and the intangible value attributable to the cost associated with SOBC under alternative reporting methods and mainly by

utilising pre and post adoption data of IFRS2/FAS123R for a single industry, the EU and US banking sectors.

The rest of this chapter is structured as follows. The following section summarises the first four Chapters of this thesis. The third section summarises the main findings, reported in Chapters 5 and 6. The fourth section of this chapter reflects on the limitations of the study; the fifth section suggests possible areas and recommendations for future research. The final section of this chapter draws conclusions and inferences by summarising this thesis' contribution to knowledge and its theoretical and practical implications.

7.2 Main findings and implications

The empirical findings of this thesis are reported in Chapters 5 and 6 along with their implications. This section is separated into two sections: i) Economic consequences of expensing SOBC; and ii) the value relevance and the information content of the recognition versus the disclosure approach to expensing the fair value of SOBC.

7.2.1 Economic consequences of expensing SOBC

The findings on economic consequences of the mandatory adoption of expensing SOBC through time resulted in modest and statistically significant negative impact on both US and EU banks' selected financial performance measures. The impact is more likely to be higher in the US banking sector. The findings also suggest that this impact is only materially confined to the largest and the highest growth banks in the EU; and for the majority of US banks, the larger is the bank, the greater is the impact. There is also evidence of a modest reduction in the changes of the selected performance measures over the period 2004-2005 for EU banks and 2005-2006 for US banks, due exclusively to the mandatory introduction of IFRS2/FAS123R.

These findings do not reflect earlier research estimations indicating that concerns and criticism of the implementation of this standard are largely unsubstantiated. These findings have implications for financial analysts and other financial reporting users in explaining how the compulsory adoption of IFRS2/FAS123R has through time resulted in prevalent possibility of modest but unnecessarily immaterial changes in selected financial performance measures of banks. This is a matter of importance given that these selected financial indicators are widely used in different contractual specifications, such as variable compensation contracts[1], and also in estimating a firm's value.

The results also show that banks in both samples, but particularly in the US, had significantly accelerated the vesting condition of SOBC grants to avoid recognising standing unvested grants using the fair value approach in the first-year adoption of IFRS2/FAS123R. Option life cycle, management discretion and structure of the recognised expense of SOBC are also found to have their influence on the trend of the negative effect of IFRS2/FAS123 on the selected performance measures. The findings also show a remarkably pronounced movement towards using cash-settled based payments, possibly due to their manipulative accounting treatment. Such issues, therefore, should be given more consideration by the standard-setters to influence or control management's tendency towards using cash-settled grants given the flexible scope allowed under the current standard to modify and sometimes reverse the recognised expense in order to 'smooth' their companies' earnings. These findings also have value and implications for users interested in the structure of share-based compensation contracts in the EU and the US banking sectors, and for other motivational aspects of these contracts and related corporate governance issues.

[1] Accounting performance indicators such as ROA, ROE, EPS, are one of the basic motivation aspects used to determine the amount of compensation in the variable compensation contracts.

In addition, the findings show that the earlier predictions and employees' fears that firms would curtail SOBC grants to avoid or reduce the mandatorily associated expense came to light after the first option cycle in the post-adoption period is over. Yet the decrease is insignificant, indicating that both US and EU banks are still using SOBC grants extensively to compensate their employees. That is, the enhanced transparency associated with mandatory IFRS2/FAS123R adoption did not significantly decrease the level of SOBC by banks and it remains relatively very high. Such an issue might have an implication for financial institutions and banking sectors' regulators in responding to the renewed calls to monitor banks' use of SOBC grants given their tendency to induce short-term risk taking incentives (Mehran and Rosenberg, 2009; Walker, 2009).

7.2.2 The value relevance and the information content of the recognition versus the disclosure approach to expensing the fair value of SOBC

The findings show that FAS123R/IFRS2 has achieved the desired aims and increased the value relevance and the comparability of the fair value of SOBC and across all the sample settings that adopted IFRS2/FAS123R. More specifically, the findings show that over the pre adoption period, the valuation coefficient on the voluntarily recognised expense of SOBC was insignificantly positive (asset), whereas the valuation coefficient on the disclosed expense was insignificantly negative (expense). The variation in the financial reporting settings also had a significant impact on investor valuation to the disclosed expense of SOBC, calculated using the grant-date fair value approach. The negative relationship between market valuation and the disclosed expense of SOBC was significantly more accentuated in banks that operate in financial reporting environment characterised by a relatively high level of investor protection. Furthermore, the findings show that while the valuation coefficients on the disclosed and the voluntarily recognised expense of SOBC are redundant and insignificant in the pre adoption period, possibly due

to the self-selection problem, the valuation coefficient on the recognised expense of SOBC over the post adoption period is positive and significant. This inference is also consistent across all the contexts that adopted IFRS2/FAS123R. SOBC schemes are usually designed to motivate employees and managers and to drive companies' future performance over the long-term. The willingness of those talented managers and employees to be compensated based on the long-term future performance and service is associated with extra market risk factor. As such, the recognised expense of SOBC expected to be perceived by market participants as an intangible asset that contributes to a better future value of companies compared to that of other operating expenses such as salaries which are paid based on the past services or performance. Indeed, across all markets, invertors reliably and favorably appreciate the incentive impact of SOBC on the issuance bank performance and they react positively to the incurred expense consequent to the adoption of IFRS2/FAS123R. The findings support the view that recognition versus disclosure matters to market participants worldwide. The findings also support the stance of the FASB/IASB and indicate that the recognised expense of SOBC in the post-IFRS2/FASB123R periods is significantly more value relevant than that disclosed in the pre-period. SOBC aims to drive companies' future performance over the long-term and it is associated with extra market risk factor. Market participants are expected to compensate the associated expense of SOBC in comparison to pricing other operating expenses such as salaries or bonuses which are paid based on the past services or performance. Unlike if it is disclosed in the footnote, the recognised expense of SOBC would also be under the scrutiny of external auditors. As such, investor' perception to future cash flow might be revised upward to reflect the intangible feature of SOBC on firm's value. Indeed, the findings indicate that the intangible value attributable to SOBC schemes as value-increasing assets is significantly more accentuated (apparent) in the

presence of the mandatory recognition relative to disclosure. The influence of the differences in the financial reporting environment on investors' perceptions to the intangible value to SOBC is less burdensome consequent to the mandatory adoption of IFRS2/FAS123R. This might also suggest an increased integration across the sample countries over time. Findings of this study provide further international insights and input to standard setting regulators and other interested parties in both recognition and measurement issues of SOBC on an international scale, and at a level of a sole standard.

Finally, the findings show that banks' size was also found to positively increase the value relevant and the intangible value attributable to the recognised expense of SOBC, but only in banks that operate in the US context or other similar contexts that have a relatively high level of investor protection. Furthermore, the findings show that market particpants perceive the recognised expense of SOBC schemes as a value-increasing asset that contributes positively to both low and high potenial grwoth bank valuation. This finding was also found to be consistent across all the financial reporting contexts under which the sample-banks operate. Furthermore, the finding shows that the positive intangible value attributable to the recognised expense of SOBC rewards is significantly more accentuated in high risk-taking banks. This inference is also consistent across all the financial reporting contexts under which the sample banks operate. Inverstors across all markets favouribly appreciate the incentive features of SOBC in higher risk taking banks. Given the recent calls in the UK (Walker, 2009), and in the US (Chen *et al*., 2006; Congressional Emergency Economic Stabilization Act, 2008) to alleviate the unnecessary and excessive risks driven by using SOBC, that SOBC induces higher risk taking in the banking industry worldwide remains a matter of both interest and significance.

Overall, the findings provide some evidence on the value relevance and the incentive features attributable to SOBC under alternative reporting methods and across different institutional settings. These findings have value and implications for academics and other financial reporting users and stakeholders who are interested in some comparative issue of international financial reporting quality in general and the measurement issue in particular. The findings also may be of interest to users interested in the motivational aspects and related corporate governance issues of SOBC contracts in the EU and the US banking sectors.

7.3 Limitations and recommendations for future research

As with other studies in this area, this thesis is subject to potential limitations. This section outlines some of these limitations, and suggests possible areas for future research. Firstly, this study is limited by the nature of the sample requirements. The sample only considers the economic consequences and the value relevance of the recognition versus the disclosure approach to expensing the fair value of SOBC on an international sample of publicly listed US and EU banks. Other countries adopted IFRS2 or its equivalent FAS123R, so the opportunity to increase the sample of banks may exist. Furthermore, the conclusion of this thesis may not be reflective of the situation that might prevail in some other sectors or other countries. Future research, therefore, can be conducted in this area, and using a wider data set from different sectors and more countries, particularly emerging economies. Secondly, the first research question of this study examines the overall impact of the mandatory adoption of IFRS2/FAS123R on a set of selected financial performance measures as a proxy to the economic consequences. Future research may use different proxies to the economic consequences such as the cost of capital. Thirdly, the study considers SOBC granted for total employees. Future studies that analyse the overall impact of expensing SOBC of executives and other employees

separately would be another interesting area to be explored by future research. Fourth, since only a few statistical inferences and control variables were used in this study to examine the economic consequences, future research may use more statistical inference and control, for example, using the continuous growth and over an extended period of time.

This study also raises other interesting issues to be considered by future research. First, this study reported evidence about banks gradual movement toward increasing the use of cash-settled based compensation. Therefore, examining the market valuation differences between equity and cash settled based compensation schemes, particularly in the US and the UK would be a potentially interesting area for future research. Secondly, the relationship between option vesting condition and banks operations complexity is to be investigated by future research interested in the structure and motivational aspects of SOBC contracts and other related corporate governance issues. Analysing the impact of firm-level corporate governance on the interrelation between expensing SOBC, and each of market and accounting variables, prior and during the recent financial crisis would also be another interesting area for future research. Investigating the response of companies in restructuring the compensation arrangements as a result of the adoption of IFRS2/FAS123R could also provide a worthwhile basis for future research. Finally, using other proxies to bank risk taking and investigating its impact on the interrelation between expensing SOBC, and each of market and accounting variables, would also be another interesting area for future research, particularly in the banking industries due to the risk sensitivity in this industry.

Nevertheless, despite these limitations, this study's key contribution adds to our understanding of the financial reporting implications of alternative reporting methods of accounting for SOBC across wider global settings and time periods of investigation. The

study utilises pre and post adoption data, 2004-2011, of a new regulation, IFRS2/FAS123R, for an international sample of US and EU banks. Most of the existing studies on the economic consequences of expensing SOBC, and on the value relevance and the information content of the mandatory expensing of the estimated fair value of SOBC relate to a single context, the US. However, studies on the IFRS2, and specifically on a wider international scale do not exist. This is a matter of importance given the convergence process between the IASB and FASB, where IFRS2 and its US equivalent FAS123R have been one of the earliest standards that have been converged. This thesis, therefore, addresses this gap in the current literature.

Appendices

Appendix A

Table (1): The information content of SOBC expense: pre adoption:

The annual buy-and-hold stock returns exclusive of dividends and computed over a bank's fiscal year

$$R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_2\, E_{it} + \alpha_3\Delta\, E_{it} + \alpha_4 Rec_{it} + \alpha_5 Dis_{it} + \alpha_6 Inv\_prot_{jt} + \alpha_7 Dis_{it} * Inv\_prot_{jt} + e_{it}$$

Description	$R_{it}(1)$	$R_{it}(2)$	$R_{it}(3)$	$R_{it}(4)$	$R_{it}(5)$	$R_{it}(6)$	$R_{it}(7)$
E_it	1.26***	1.34***	1.24**	1.30***	1.26**	1.36***	1.30**
	(0.51)	(0.50)	(0.54)	(0.57)	(0.56)	(0.52)	(0.54)
Δ E_it	0.348***	0.343***	0.344***	0.343***	0.356***	0.358***	0.346***
	(0.096)	(0.102)	(0.103)	(0.08)	(0.101)	(0.102)	(0.103)
Rec_it		4.45	6.32	6.71	5.14	6.20	5.95
		(6.77)	(6.91)	(7.34)	(6.81)	(7.03)	(6.95)
C_Dis_it1		-4.00	-6.31	-7.55	-4.82	-5.81	-5.29
		(3.58)	(4.19)	(5.42)	(3.39)	(3.51)	(3.46)
LT * C_Dis_it			-8.49**				
			(6.26)				
USA * C_Dis_it				-10.34**			
				(7.11)			
ASD * C_Dis_it					-33.65**		
					(14.28)		
DRI * C_Dis_it						-16.15***	
						(12.81)	
SOIP * C_Dis_it							-3.17**
							(1.91)
Constant	-0.018	-0.043	-0.015	-0.024	-0.051	-0.111**	-0.037
	(0.057)	(0.055)	(0.063)	(0.062)	(0.063)	(0.064)	(0.064)
Country-year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	21%	21%	23.3%	23.3%	24.1%	27.4%	24.5%
N	115	115	115	115	115	115	115

Standard errors in parentheses are based on robust standard errors.*p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock returns inclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share are computed as total net income before extraordinary items divided by the number of common shares outstanding. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. Rec_it: recognised expense of share-option based compensation scaled by the stock price at the beginning of the fiscal year. Dis_it: disclosed expense of share-option based compensation scaled by the stock price at the beginning of the fiscal year. C_Dis_it: disclosed expense of share-option based compensation centered by the average mean of disclosed expense and scaled by the stock price at the beginning of the fiscal year. Pre-adoption period data has been manually extracted from the first year adoption comparative figures or the pro-forma disclosure regarding the impact of options expense. All market and accounting measures are winsorised at 2%. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) a country's legal tradition (1= common law; 0 = code law) based on La Porta *et al*. (1997), Ball *et al*. (2000) (2) the US economy =(1) versus the remaining countries =(0); (3) [ASD]the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample.; (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year.* shows the interaction effects between two variables.

Table (2): The information content of SOBC expense: pre vs post adoption:

The annual buy-and-hold stock returns exclusive of dividends and computed over a bank's fiscal year

$$R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{01,i}C_j + \alpha_1 E_{it} + \alpha_2\Delta E_{it} + \alpha_3 SOBC_{it} + \alpha_4 Post + \alpha_5 Post * SOBC_{it} + \alpha_6 Inv\_prot_{jt} + \alpha_7 SOBC_{it} * Inv\_prot_{jt} + \alpha_8 Post * Inv\_prot_{jt} + \alpha_9 Post * SOBC_{it} * Inv\_prot_{it} * + e_{it}$$

Description	R_it (1)	R_it (2)	R_it (3)	R_it (4)	R_it (5)	R_it (6)	R_it (7)	R_it (8)
E_it	0.398**	0.364**	0.415***	0.320**	0.328**	0.373**	0.331**	0.340**
	(0.156)	(0.150)	(0.150)	(0.150)	(0.150)	(0.151)	(0.152)	(0.151)
Δ E_it	0.226***	0.177***	0.157***	0.172***	0.166***	0.170***	0.174***	0.170***
	(0.0494)	(0.0481)	(0.0484)	(0.0483)	(0.0481)	(0.0486)	(0.0482)	(0.0483)
SOBC		22.28***	-2.572	-2.729	-4.031	3.072	0.920	8.776
		(2.823)	(8.178)	(9.064)	(15.88)	(11.95)	(16.28)	(15.12)
Post * SOBC			28.69***	26.87***	38.23**	22.04**	30.95**	13.87**
			(8.847)	(9.664)	(17.13)	(12.85)	(17.63)	(15.72)
Post * SOBC * LT				-12.71				
				(21.85)				
Post * SOBC * US					-13.45			
					(19.88)			
Post * SOBC * ASD						40.37		
						(53.87)		
Post * SOBC * DR							-6.53	
							(43.24)	
Post * SOBC * SOIP								4.99
								(6.84)
Constant	0.050	0.179***	0.043	0.029	0.069	0.106	0.073	0.198
	(0.069)	(0.068)	(0.090)	(0.151)	(0.133)	(0.204)	(0.303)	(0.125)
Country-year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	57.8%	60.7%	60.9%	60.4%	61.2%	60.9%	61.0%	60.3%
N	915	915	915	915	915	915	915	915

Standard errors in parentheses are based on robust standard errors. *p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock returns exclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share are computed as total net income before extraordinary items divided by the number of common shares outstanding. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. SOBC_it: The recognised expense of share-option based compensation scaled by the stock price at the beginning of the fiscal year. In the case of interaction, this expense is centered by the average mean for the ease of interpretation. All market and accounting measures are winsorised at 2%. Post: a dummy variable = (1) post-adoption = (0) pre-adoption period. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protection: (1) a country's legal tradition (0= common law; 1 = code law) based on La Porta *et al*. (1997), Ball *et al*. (2000) (2) the US economy =(1) versus the remaining countries =(0); (3) [ASD]the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample.; (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year. * shows the interaction effects between two variables

Table (3): The effects of the differences in the institutional settings on the information content of the recognised expense of SOBC (post adoption analysis):

The annual buy-and-hold stock returns exclusive of dividends and computed over a bank's fiscal year

$R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1\, E_{it} + \alpha_2\Delta\, E_{it} + \alpha_3 SOBC_{it} + \alpha_4\, Inv\_prot_{jt} + \alpha_5\, SOBC_{it} * Inv\_prot_{jt} + e_{it}$

	R_it (1)	R_it (2)	R_it (3)	R_it (4)	R_it (5)	R_it (6)	R_it (7)
E_it	0.414**	0.433***	0.425**	0.408**	0.437***	0.426**	0.433***
	(0.169)	(0.163)	(0.165)	(0.162)	(0.165)	(0.166)	(0.163)
Δ E_it	0.215***	0.148***	0.149***	0.144***	0.144***	0.148***	0.149***
	(0.055)	(0.053)	(0.053)	(0.053)	(0.054)	(0.053)	(0.053)
SOBC_it		26.12***	25.65***	25.10***	24.31***	25.55***	25.65***
		(3.355)	(3.768)	(4.360)	(4.543)	(7.777)	(3.768)
LT * SOBC			2.118				
			(7.792)				
USA * SOBC				4.488			
				(5.923)			
ASD * SOBC					9.605		
					(16.02)		
DRI * SOBC						0.723	
						(8.482)	
SOIP * SOBC							0.366
							(2.361)
Constant	0.191**	-0.006	0.104	0.293***	0.489	0.237	0.102
	(0.089)	(0.089)	(0.087)	(0.065)	(0.506)	(0.191)	(0.087)
Country-year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	57.6%	60.7%	60.7%	60.2%	60.7%	60.7%	60.7%
N	800	800	800	800	800	800	800

Standard errors in parentheses are based on robust standard errors.*p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock returns exclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share is computed as total net income before extraordinary items divided by the number of common shares outstanding. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. SOBC_it: The recognised expense of share-option based compensation scaled by the stock price at the beginning of the fiscal year. In the case of interaction, the recognised expense of share-option based compensation is centered by the average mean, for the ease of interpretation. All market and accounting measures are winsorised at 2%. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) a country's legal tradition (1= common law; 0 = code law) based on La Porta *et al*. (1997), Ball *et al*. (2000) (2) the US economy =(1) versus the remaining countries =(0); (3) [ASD] the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample.; (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year.* shows the interaction effects between two variables.

Table (4): The effect of banks' size on investors' perception to the recognised expense of SOBC, and across different reporting environments.

The annual buy-and-hold stock returns exclusive of dividends and computed over a bank's fiscal year

$$-R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1 E_{it} + \alpha_2 \Delta E_{it} + \alpha_3 SOBC_{it} + \alpha_4 Size + \alpha_5 SOBC_{it} * Size + \alpha_6 Inv\_Prot_{jt} + \alpha_7 SOBC_{it} * Inv\_Prot_{jt} + \alpha_8 Size * Inv\_Prot_{jt} + \alpha_9 SOBC_{it} * Size * Inv\_Prot_{jt} + e_{it}$$

	R_it (1)	R_it (2)	R_it (3)	R_it (4)	R_it (5)	R_it (6)
E_it	0.428***	0.383**	0.352**	0.375**	0.400**	0.397**
	(0.163)	(0.165)	(0.164)	(0.165)	(0.166)	(0.165)
SOBC	22.02***	45.77***	47.44***	33.00***	38.40***	33.90***
	(4.813)	(10.15)	(10.15)	(6.730)	(10.68)	(7.367)
Δ E_it	0.147***	0.155***	0.155***	0.146***	0.153***	0.153***
	(0.0533)	(0.0532)	(0.0535)	(0.0535)	(0.0533)	(0.0532)
Size*SOBC	7.345**	-29.24**	-16.00	-10.02	-22.68	-13.80
	(6.308)	(12.60)	(11.35)	(8.566)	(14.27)	(9.546)
Size*SOBC*LT		47.85***				
		(14.57)				
Size*SOBC*USA			28.12**			
			(14.15)			
Size*SOBC*ASD				102.9***		
				(35.60)		
Size*SOBC*DRI					37.42**	
					(15.88)	
Size*SOBC*SOIP						12.46***
						(4.360)
Constant	-0.008	-0.012	-0.025	0.394	0.183	-0.011
	(0.094)	(0.095)	(0.117)	(0.506)	(0.217)	(0.094)
Country-year effect	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	60.7%	61.2%	61.0%	61%	60.9%	61%
N	800	800	800	800	800	800

Standard errors in parentheses are based on robust standard errors. *p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock returns exclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share is computed as total net income before extraordinary items divided by the number of common shares outstanding adjusted for share options expense. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. SOBC_it: The recognised expense of share-option based compensation scaled by the stock price at the beginning of the fiscal year. In the case of interaction, The recognised expense of share-option based compensation is centered by the average mean for the ease of interpretation. Size: a proxy for banks' size (1= if market value of a bank> median of the sample market value, 0= otherwise) [the mean criterion is also used to partition banks' size as robustness check to the median criterion, the results do not change considerably]. All market and accounting measures are winsorised at 2%. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) a country's legal tradition (1= common law; 0= code law) based on La Porta *et al*. (1997), Ball *et al*. (2000). (2) the US economy = (1) versus the remaining countries = (0). (3) [ASD] the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample. (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year. * shows the interaction effects between two variables

Table (5): The effect of banks' potential growth rate on investors' perception to the recognised expense of SOBC, and across different reporting environments.

The annual buy-and-hold stock returns exclusive of dividends and computed over a bank's fiscal year

$$-R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1 E_{it} + \alpha_2 \Delta E_{it} + \alpha_3 SOBC_{it} + \alpha_4 Growth\_Rate + \alpha_5 SOBC_{it} * Growth\_Rate + \alpha_6 Inv\_Prot_{jt} + \alpha_7 SOBC_{it} * Inv\_Prot_{jt} + \alpha_8 Growth\_Rate * Inv\_Prot_{jt} + \alpha_9 SOBC_{it} * Growth\_Rate * Inv\_Prot_{jt} + e_{it}$$

	R_it (1)	R_it (2)	R_it (3)	R_it (4)	R_it (5)	R_it (6)
E_it	0.409**	0.415**	0.401**	0.420**	0.412**	0.414**
	(0.163)	(0.166)	(0.164)	(0.165)	(0.166)	(0.166)
SOBC	30.94***	30.91***	35.87***	28.98***	31.03***	29.34***
	(4.058)	(4.865)	(6.198)	(5.207)	(8.595)	(5.732)
Δ E_it	0.162***	0.162***	0.147***	0.155***	0.160***	0.163***
	(0.0537)	(0.0540)	(0.0539)	(0.0545)	(0.0540)	(0.0539)
Growth rate*SOBC	-11.81*	-11.88*	-0.658	-15.87	-26.89	-6.573
	(6.312)	(7.186)	(9.235)	(10.05)	(19.95)	(13.48)
Growth rate*SOBC*LT		6.439				
		(18.38)				
Growth rate*SOBC*USA			-19.36			
			(12.54)			
Growth rate*SOBC*ASD				8.309		
				(31.33)		
Growth rate*SOBC*DRI					16.17	
					(21.13)	
Growth rate*SOBC*SOIP						-2.646
						(5.940)
_cons	-0.037	-0.032	-0.127	0.444	0.153	-0.043
	(0.092)	(0.095)	(0.100)	(0.563)	(0.220)	(0.094)
Country-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	60.9%	60.7%	61.1%	60.8%	60.7%	60.7%
N	800	800	800	800	800	800

Standard errors in parentheses are based on robust standard errors. *p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock return exclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share is computed as total net income before extraordinary items divided by the number of common shares outstanding adjusted for share options expense. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. SOBC_it: The recognised expense of SOBC scaled by the stock price at the beginning of the fiscal year. In the case of interaction, SOBC expense is centered by the average mean of recognised expense for the ease of interpretation. Growth_rate_it: a proxy for banks' growth opportunity (1= if the Market to book value ratio> median, 0= otherwise) [the mean criterion is also used to partition banks' growth opportunity as robustness check to the median criterion, the results do not change considerably]. All market and accounting measures are winsorised at 2%. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) a country's legal tradition (0= common law; 1 = code law) based on La Porta *et al*. (1997), Ball *et al*. (2000)(2) the US economy = (1) versus the remaining countries = (0). (3) [ASD] the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample. (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year. * shows the interaction effects between two variables

Table (6): The influence of banks' risk taking on investors' perception to the recognised expense of SOBC, and across different reporting environments

The annual buy-and-hold stock returns exclusive of dividends and computed over a bank's fiscal year

$$-R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1 E_{it} + \alpha_2 \Delta E_{it} + \alpha_3 SOBC_{it} + \alpha_4 Risk + \alpha_5 SOBC_{it} * Risk + \alpha_6 Inv\_Prot_{jt} + \alpha_7 SOBC_{it} * Inv\_Prot_{jt} + \alpha_8 Risk * Inv\_Prot_{jt} + \alpha_9 SOBC_{it} * Risk * Inv\_Prot_{jt} + e_{it}$$

	R_it (1)	R_it (2)	R_it (3)	R_it (4)	R_it (5)	R_it (6)
Earning before E/D	0.448***	0.447***	0.417**	0.452***	0.439***	0.444***
	(0.167)	(0.169)	(0.167)	(0.168)	(0.170)	(0.169)
SOBC	15.71***	14.94**	11.47*	8.006*	0.288	11.28
	(5.454)	(5.931)	(6.435)	(8.736)	(15.81)	(9.869)
Δ E_it	0.142***	0.133**	0.135**	0.131**	0.138***	0.134**
	(0.0531)	(0.0533)	(0.0533)	(0.0535)	(0.0532)	(0.0532)
Risk*SOBC	16.14**	19.34***	17.92**	24.10**	32.92**	21.47**
	(6.477)	(7.359)	(8.490)	(10.02)	(18.07)	(11.54)
Risk*SOBC*LT		3.836				
		(18.00)				
Risk*SOBC* USA			-8.754			
			(13.74)			
Risk*SOBC* ASD				-13.00		
				(34.66)		
Risk*SOBC* DRI					-18.02	
					(19.39)	
Risk*SOBC* SOIP						-1.187
						(5.101)
Const	0.045	0.065	-0.070	0.289	0.122	0.054
	(0.092)	(0.094)	(0.109)	(0.508)	(0.214)	(0.093)
Country-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	61%	61.1%	61.0%	61.1%	60.9%	61.0%
N	800	800	800	800	800	800

Standard errors in parentheses are based on robust standard errors. *p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock return exclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share is computed as total net income before extraordinary items divided by the number of common shares outstanding adjusted for share options expense. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. SOBC_it: The recognised expense of SOBC scaled by the stock price at the beginning of the fiscal year. In the case of interaction, SOBC expense is centered by the average mean of recognised expense for the ease of interpretation. Market risk: (1= if monthly volatility of stock price> median, 0= otherwise) [the mean criterion is also used to partition banks' risk as robustness check to the median criterion, the results (not reported) do not change considerably. Weekly's and daily's volatility are also used as a robustness check for Monthly volatility. The results (not reported) do not change considerably]. All market and accounting measures are winsorised at 2%. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) a country's legal tradition (0= common law; 1 = code law) based on La Porta *et al*. (1997), Ball *et al*. (2000)(2) the US economy = (1) versus the remaining countries = (0). (3) [ASD] the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample. (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year. * shows the interaction effects between two variables.

Appendix B

Table (1): The information content of stock option expense: pre vs post adoption:

The sample years exclude the financial crisis of 2008.

$$R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{01,i}C_j + \alpha_1 E_{it} + \alpha_2\Delta E_{it} + \alpha_3 SOBC_{it} + \alpha_4 Post + \alpha_5 Post * SOBC_{it} + \alpha_6 Inv\_prot_{jt} + \alpha_7 SOBC_{it} * Inv\_prot_{jt} + \alpha_8 Post * Inv\_prot_{jt} + \alpha_9 Post * SOBC_{it} * Inv\_prot_{it} + e_{it}$$

Description	R_it (1)	R_it (2)	R_it (3)	R_it (4)	R_it (5)	R_it (6)	R_it (7)	R_it (8)
E_it	0.346**	0.411**	0.357**	0.365**	0.377**	0.419***	0.411**	0.357**
	(0.166)	(0.161)	(0.159)	(0.161)	(0.161)	(0.162)	(0.161)	(0.159)
Δ E_it	0.256***	0.179***	0.187***	0.172***	0.166***	0.171***	0.256***	0.179***
	(0.0536)	(0.0526)	(0.0524)	(0.0528)	(0.0528)	(0.0532)	(0.0536)	(0.0526)
SOBC		23.26***	-2.751	-2.743	-4.774	3.163	0.702	8.767
		(3.095)	(8.605)	(9.643)	(16.99)	(12.76)	(17.42)	(16.11)
Post * SOBC			30.95***	28.46***	39.41**	23.59*	32.52*	16.52
			(9.361)	(10.33)	(18.44)	(13.79)	(18.97)	(16.76)
Post * SOBC * LT				-11.54				
				(23.30)				
Post * SOBC * US					-12.79			
					(21.39)			
Post * SOBC * ASD						40.64		
						(57.75)		
Post * SOBC * DRI							-6.628	
							(46.47)	
Post * SOBC * SOIP								4.443
								(7.302)
Constant	0.057	0.137*	0.042	0.024	0.0228	0.027	-0.033	0.193
	(0.074)	(0.073)	(0.095)	(0.160)	(0.142)	(0.228)	(0.341)	(0.134)
Country-year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.569	0.600	0.605	0.597	0.605	0.602	0.603	0.595
N	786	786	786	786	786	786	786	786

Standard errors in parentheses are based on robust standard errors. *p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock returns inclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share are computed as total net income before extraordinary items divided by the number of common shares outstanding. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. SOBC_it: The recognised expense of share-option based compensation scaled by the stock price at the beginning of the fiscal year. In the case of interaction, this expense is centered by the average mean for the ease of interpretation. All market and accounting measures are winsorised at 2%. Post: a dummy variable = (1) post-adoption = (0) pre-adoption period. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protection: (1) a country's legal tradition (0= common law; 1 = code law) based on La Porta *et al*. (1997), Ball *et al*. (2000) (2) the US economy =(1) versus the remaining countries =(0); (3) [ASD]the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample.; (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year. * shows the interaction effects between two variables

Table (2): The effects of the differences in the institutional settings on the information content of the recognised expense of SOBC (post adoption analysis):

The sample years exclude the financial crisis of 2008

$$R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1\, E_{it} + \alpha_2\Delta\, E_{it} + \alpha_3 SOBC_{it} + \alpha_4\, Inv\_prot_{jt} + \alpha_5\, SOBC_{it} * Inv\_prot_{jt} + e_{it}$$

	R_it (1)	R_it (2)	R_it (3)	R_it (4)	R_it (5)	R_it (6)	R_it (7)
E_it	0.36**	0.377**	0.391**	0.333**	0.394**	0.393**	0.398**
	(0.182)	(0.175)	(0.178)	(0.174)	(0.177)	(0.178)	(0.178)
Δ E_it	0.253***	0.181***	0.180***	0.176***	0.172***	0.179***	0.180***
	(0.060)	(0.058)	(0.058)	(0.058)	(0.059)	(0.058)	(0.058)
SOBC_it		28.11***	28.98***	24.71***	24.64***	22.77***	25.35***
		(3.70)	(4.17)	(4.78)	(4.98)	(8.49)	(5.84)
LT * SOBC			-3.89				
			(8.58)				
USA * SOBC				-0.34			
				(6.57)			
ASD * SOBC					18.50		
					(17.62)		
DRI * SOBC						6.53	
						(9.29)	
SOIP * SOBC							1.59
							(2.59)
Constant	0.129	-0.094	0.014	0.235***	0.367	0.149	0.013
	(0.091)	(0.093)	(0.097)	(0.069)	(0.580)	(0.218)	(0.097)
Country-year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.567	0.603	0.602	0.593	0.603	0.602	0.602
N	671	671	671	671	671	671	671

Standard errors in parentheses are based on robust standard errors.*p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock returns inclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share is computed as total net income before extraordinary items divided by the number of common shares outstanding. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. SOBC_it: The recognised expense of share-option based compensation scaled by the stock price at the beginning of the fiscal year. In the case of interaction, the recognised expense of share-option based compensation is centered by the average mean, for the ease of interpretation. All market and accounting measures are winsorised at 2%. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) a country's legal tradition (1= common law; 0 = code law) based on La Porta *et al*. (1997), Ball *et al*. (2000) (2) the US economy =(1) versus the remaining countries =(0); (3) [ASD] the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample.; (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year.* shows the interaction effects between two variables.

Appendix C

Table 1: The influence of banks' risk taking on investors' perception to the recognised expense of SOBC, and across different reporting environments

The daily volatility share price is used as a proxy for the market risk of the selected sample banks

$$-R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1 E_{it} + \alpha_2 \Delta E_{it} + \alpha_3 SOBC_{it} + \alpha_4 Risk + \alpha_5 SOBC_{it} * Risk + \alpha_6 Inv\_Prot_{jt} + \alpha_7 SOBC_{it} * Inv\_Prot_{jt} + \alpha_8 Risk * Inv\_Prot_{jt} + \alpha_9 SOBC_{it} * Risk * Inv\_Prot_{jt} + e_{it}$$

	R_it (1)	R_it (2)	R_it (3)	R_it (4)	R_it (5)	R_it (6)
Earning before E/D	0.400**	0.375**	0.375**	0.390**	0.337**	0.372**
	(0.164)	(0.166)	(0.164)	(0.165)	(0.166)	(0.166)
SOBC	17.17***	20.20***	19.73***	13.28**	6.437	14.52**
	(5.317)	(6.798)	(7.565)	(5.977)	(9.156)	(6.550)
Δ E_it	0.162***	0.167***	0.150***	0.169***	0.168***	0.165***
	(0.0527)	(0.0529)	(0.0529)	(0.0534)	(0.0526)	(0.0528)
Risk*SOBC	14.69**	9.565	25.08***	23.72***	58.01***	28.56***
	(6.356)	(7.777)	(9.240)	(8.538)	(15.59)	(9.819)
Risk*SOBC*LT		22.34				
		(14.82)				
Risk*SOBC* USA			-16.97			
			(12.86)			
Risk*SOBC* ASD				-44.53		
				(30.00)		
Risk*SOBC* DRI					-52.48***	
					(17.29)	
Risk*SOBC* SOIP						-8.379*
						(4.61)
Const	-0.010	-0.015	-0.039	0.747	0.204	-0.023
	(0.092)	(0.096)	(0.106)	(0.543)	(0.194)	(0.094)
Country-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	61%	61%	61.1%	61%	61.3%	61%
N	800	800	800	800	800	800

Standard errors in parentheses are based on robust standard errors. *p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock return inclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share is computed as total net income before extraordinary items divided by the number of common shares outstanding adjusted for share options expense. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. SOBC_it: The recognised expense of SOBC scaled by the stock price at the beginning of the fiscal year. In the case of interaction, SOBC expense is centered by the average mean of recognised expense for the ease of interpretation. Market risk: (1= if daily volatility of share price> median, 0= otherwise) [the mean criterion is also used to partition banks' risk as robustness check to the median criterion, the results (not reported) do not change considerably. All market and accounting measures are winsorised at 2%. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) a country's legal tradition (0= common law; 1 = code law) based on La Porta *et al*. (1997), Ball *et al*. (2000) (2) the US economy = (1) versus the remaining countries = (0). (3) [ASD] the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample. (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year. * shows the interaction effects between two variables.

Table 2: The influence of banks' risk taking on investors' perception to the recognised expense of SOBC, and across different reporting environments

The weekly volatility share price is used as a proxy for the market risk of the selected sample banks

$$-R_{it} = \alpha_0 + \sum\alpha_{01,i}Y_t + \sum\alpha_{02,i}C_j + \alpha_1 E_{it} + \alpha_2 \Delta E_{it} + \alpha_3 SOBC_{it} + \alpha_4 Risk + \alpha_5 SOBC_{it} * Risk + \alpha_6 Inv\_Prot_{jt} + \alpha_7 SOBC_{it} * Inv\_Prot_{jt} + \alpha_8 Risk * Inv\_Prot_{jt} + \alpha_9 SOBC_{it} * Risk * Inv\_Prot_{jt} + e_{it}$$

	R_it (1)	R_it (2)	R_it (3)	R_it (4)	R_it (5)	R_it (6)
Earning before E/D	0.376**	0.380**	0.349**	0.384**	0.370**	0.380**
	(0.164)	(0.166)	(0.165)	(0.166)	(0.167)	(0.167)
SOBC	17.13***	17.47**	26.39***	8.450	-6.948	11.84*
	(6.226)	(7.062)	(9.976)	(9.005)	(15.74)	(9.627)
Δ E_it	0.164***	0.160***	0.158***	0.156***	0.159***	0.159***
	(0.0528)	(0.0530)	(0.0531)	(0.0532)	(0.0529)	(0.0530)
Risk*SOBC	13.49**	14.07**	10.29	21.27**	40.21**	19.33*
	(7.039)	(8.027)	(10.80)	(10.27)	(18.15)	(11.37)
Risk*SOBC*LT		4.088				
		(17.70)				
Risk*SOBC* USA			4.034			
			(14.34)			
Risk*SOBC* ASD				-20.62		
				(34.48)		
Risk*SOBC* DRI					-30.81	
					(19.70)	
Risk*SOBC* SOIP						-2.740
						(5.130)
Const	-0.001	0.0035	-0.074	0.312	0.0934	-0.005
	(0.093)	(0.096)	(0.111)	(0.507)	(0.223)	(0.094)
Country-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	60.9%	60.8%	60.9%	61%	60.9%	60.8%
N	800	800	800	800	800	800

Standard errors in parentheses are based on robust standard errors. *p< 0.10, **p< 0.05, ***p< 0.01. R_{it} : The annual buy-and-hold stock return inclusive of dividends and computed over a bank's fiscal year. E_{it}: The annual earnings per share scaled by the stock price at the beginning of the fiscal year. Earnings per share is computed as total net income before extraordinary items divided by the number of common shares outstanding adjusted for share options expense. Δ E_{it}: The year-to-year change in earnings per share scaled by the stock price at the beginning of the fiscal year. SOBC_it: The recognised expense of SOBC scaled by the stock price at the beginning of the fiscal year. In the case of interaction, SOBC expense is centered by the average mean of recognised expense for the ease of interpretation. Market risk: (1= if weekly volatility of share price> median, 0= otherwise) [the mean criterion is also used to partition banks' risk as robustness check to the median criterion, the results (not reported) do not change considerably. All market and accounting measures are winsorised at 2%. A set of country-level institutional variables is used to partition the sample in the cross-sectional analyses as a proxy for investor protections: (1) a country's legal tradition (0= common law; 1 = code law) based on La Porta *et al*. (1997), Ball *et al*. (2000) (2) the US economy = (1) versus the remaining countries = (0). (3) [ASD] the anti-self-dealing index from Djankov *et al*. (2008) as a proxy for the level of legal protection of minority shareholders against insider expropriation centered by mean of the selected countries in the sample. (4) the disclosure requirements index in securities offerings from La Porta *et al*. (2006) to reflect better disclosure rules, centered by mean of the selected countries in the sample. (5) [SOIP]: The average of the strength of shareholders protection from World Economic Forum over the period of (2008-2011) centered by mean of the selected countries in the sample. The raw values are translated into US$ using the respective exchange rate at the end of the fiscal year. * shows the interaction effects between two variables.

References:

Aboody, D., (1996), 'Market valuation of employee stock options', *Journal of Accounting and Economics,* Vol. 22, No. pp. 357–391.

Aboody, D., Barth, M., Kasznik, R., (2004a), 'SFAS No. 123 stock-based compensation expense and equity market values', *The Accounting Review,* Vol. 79, No. 2, pp. 251-275.

Aboody, D., Barth, M., Kasznik, R., (2004b), 'Firms' voluntary recognition of stock-based compensation expense', *Journal of Accounting Research,* Vol. 42, No. 2, pp. 123-150.

Aboody, D., M. Barth and R. Kasznik, (2006), 'Do firms manage stock-based compensation expense disclosed under SFAS 123?', *Review of Accounting Studies,* Vol. 11, No. 4, pp. 429-461.

Agostino M, Drago D., and S. Damiano (2011), 'The value relevance of IFRS in the European banking industry', *Review of Quantitative Finance and Accounting,* Vol. 36, No. 3, pp. 437–457.

Aharony, J. and Swary, I., (1981), 'The effects of the 1970 Bank Holding Company Act: Evidence from capital markets', *Journal of Finance,* Vol. 36, No. 4, pp. 841-853.

Ahmed, A. S., E. Kilic and G. J. Lobo, (2006), 'Does recognition versus disclosure matter? Evidence from value-relevance of banks' recognized and disclosed derivative financial instruments', *The Accounting Review,* Vol. 81, No. 3, pp. 567–588.

APB. (1972). Opinion No 25: Accounting for stock issued to employees. New York: APB.

Apostolou, N. G. and Crumbley, D. L., (2001), 'Accounting for stock options: The controversy continues', *The CPA Journal,* Vol. 71, No. 5, pp. 34-39.

Apostolou, N. G. and Crumbley, D. L., (2005), 'Accounting for stock options: Update on the Continuing Conflict', *The CPA Journal,* Vol. 75, No. 8, pp. 30-33.

Avraham D, Selvaggi P, Vickery J., (2012). 'A Structural view of bank holding companies, *Federal Reserve Bank of New York Economic Policy Review,* Vol. 18, No. 2, pp.65-82.

Babenko, I. and Tserlukevich, Y. (2009), 'Analyzing the tax benefits from employee stock options', *The Journal of Finance,* Vol. 64, No. 4, pp. 1797-1825.

Ball, R, S.P. Kothari, and Robin, A., (2000), 'The effect of international institutional factors on properties of accounting earnings', *Journal of Accounting and Economics*, Vol. 29, No. 1, pp.1-51.

Ball, R., Robin, A., Wu, J., (2003), 'Incentives versus standards: properties of accounting income in four East Asian countries', *Journal of Accounting and Economics*, Vol, 36, No. 1-3, pp. 235-270.

Ball, R., (2006), 'IFRS: Pros and cons for investors', *Accounting and Business Research,* International Accounting Policy Forum, Vol. 36, Supplement. 1, pp. 5-27.

Balsam, S., H. Mozes and H. Newman, (2003), 'Managing pro forma stock option expense under SFAS No. 123', *Accounting Horizons,* Vol. 17, No.1, pp. 31–45.

Balsam, S., E. Bartov and J. Yin, (2006), 'Disclosure versus recognition of option expense: An empirical investigation of SFAS No. 148 and stock returns', working paper, Temple University.

Balsam, S., A. Reitenga and J. Yin, (2008), 'Option acceleration in response to SFAS 123(R)', *Accounting Horizons,* Vol. 22, No.1, pp. 23–45.

Barber, D., and Lyon, D., (1996), 'Detecting abnormal operating performance: The empirical power and specification of test statistics', *Journal of Financial Economics,* Vol. 41, No.1, pp.359-399.

Barrier, M. (1994), 'A possible threat to stock options', *Nations Business*, Vol. 82 No. 8, pp.27-30.

Barth, M. E., W. H. Beaver, and W. R. Landsman, (1992), 'The market valuation implications of net periodic pension cost components', *Journal of Accounting and Economics,* Vol.15, No.1, pp. 27–62.

Barth, M., Beaver, W., Landsman, W., (1996), 'Value-relevance of banks' fair value disclosures under SFAS No.107', *The Accounting Review*, Vol. 71, No. 4, pp. 513-537.

Barth, M. E., Beaver, W. H. and landsman, W. R., (2001), 'The relevance of the value relevance literature for financial accounting standard setting: Another view', *Journal of accounting and Economics*, Vol. 31, No.1-3, pp.77-104.

Barth, M., Clinch, G. and Shibano T., (2003), 'Market effects of recognition and disclosure', *Journal of Accounting Research,* Vol. 41, No.1, pp. 581-609.

Barth, M., Landsman, W. R., and Lang, M. H., (2008), 'International accounting standards and accounting quality', *Journal of Accounting Research*, Vol. 46, No. 3, pp.467-498.

Bartov, E. and C. Hayn, (2006), 'Change in investor sentiment regarding stock option accounting', working paper, New York University.

Bear Stearns, (2005), '2004 Earnings impact of stock options on the S&P 500 and NASDAQ 100 earnings', *Equity Research, Accounting & Tax Policy*, March 21, 2005.

Bebchuk, L. A., Fried J. M., and Walker, D. I., (2002), 'Managerial power and rent extraction in the design of executive compensation' *University of Chicago Law Review*, Vol. 69, No 3, pp. 751-846.

Beccalli E., Casu B. and Girardone C., (2006), 'Efficiency and stock performance in European banking', *Journal of Business Finance and Accounting*, Vol.33, No.1-2, pp. 245-262.

Bell, T.B., Landsman, W.R., Miller, B.L., Yeh, S., (2002), 'The valuation implications of employee stock option accounting for profitable computer software firms'. *The Accounting Review*, Vol, 77, No. 4, pp. 971-996.

Berle, A. A. and Means, G. G. C., (1932). '*The modern corporation and private property*', New York: The Macmillan Company.

Bernard, V. and K. Schipper, (1994), 'Recognition and disclosure in financial reporting', working paper, University of Michigan and University of Chicago.

Bettis, J. C., Bizjak J., Coles J., and Kalpathy S., (2013), 'Performance-vesting provisions in executive compensation'. Working paper, Arizona State University.

Bettis, C., Bizjak J., Coles J., and Kalpathy S., (2010), 'Stock and option grants with performance-based vesting provisions', *Review of Financial Studies,* Vol. 23, No. 10, pp. 3849-3888.

Blaikie, N., (2010), '*Designing social research*', Cambridge: Polity Press.

Blasi, J. R., Conte, M. and Kruse, D., (1996), 'Employee stock ownership and corporate performance among public companies', *Industrial and Labour Relations Review,*Vol.50, No. 1, pp. 60-79.

Blessing, L., and Chakrabarti, A., (2009), '*DRM, a Design Research Methodology*', London: Springer-Verlag Ltd.

Bodie, Z., Kaplan, R. S., and Merton, R. C., (2003), 'For the last time: Stock options are an expense', *Harvard Business Review,* Vol. 81, No. 3, pp. 63-71.

Botosan, C. A., and Plumlee, M. A., (2001), 'Stock option expense: The sword of Damocles revealed', *Accounting Horizons,* Vol.15, No.4, pp. 311-327.

Branson, J. and Alia, M.J., (2011), "The Effect of environmental factors on accounting diversity-A literature review", Working Paper, SSRN.

Brown, L.D. and Lee, Y.J., (2011), 'Changes in option-based compensation around the issuance of FAS 123R', *Journal of Business Finance & Accounting,* Vol. 38, No. 9-10, pp. 1053-1095.

Brown, S., Kin, L., and Thomas, L., (1999),'Use of R2 in accounting research: Measuring changes in value relevance over the last four decades', *Journal of Accounting and Economics,* Vol. 28, No. 2, pp. 83–115.

Brown, P., and Yew, E., (2002), 'How do investors regard ESOs?', *Australian Accounting Review,* Vol. 12, No. 1, pp. 36-42.

Bryman, A. and Bell, E., (2007), '*Business Research Methods*', 2nd ed., Oxford: Oxford University Press.

Burrell, G., and Morgan, G. (1979), '*Sociological paradigms and organisational analysis: elements of the sociology of corporate life*', London: Heinemann.

Bushman, R. M. & Smith, A. J., (2001), 'Financial accounting information and corporate governance', *Journal of accounting and Economics,* Vol. 32, No. 1-3, pp. 237-333.

Carter, M, Soo, B and Zamora, V., (2008), 'Market valuation for stock option compensation: Changes in sentiment or reporting?', Working paper, Boston College.

Chalmers, K. and Godfrey, J.,(2005), 'Expensing stock-based payments: A material concern?', *Journal of International Accounting, Auditing and Taxation,* Vol. 14, No.2, pp. 157-173.

Chamberlain, S. and S. Hsieh, (1999), 'The Effectiveness of SFAS 123 employee option cost disclosures', Working paper, Santa Clara University.

Chen, C.R., Steiner, T.L., Whyte, A.M., (2006), 'Does stock option-based executive compensation induce risk-taking? An analysis of the banking industry', *Journal of Banking and Finance,* Vol. 30, No.1, pp.915–945.

Choudhary, P., Rajgopal, S. and Venkatachalam, M., (2009), 'Accelerated vesting of employee stock options in anticipation of FAS 123-R', *Journal of Accounting Research,* Vol. 47. No.1, pp.105-146.

Christian, C; J.S., Moffitt, and Suberly, L., (2008), 'Fundamental analysis for evaluating bank performance', *Bank Accounting and Finance,* Vol. 21, No. 6, p17-24.

Chua, W. F., (1986) 'Radical developments in accounting thought', *The Accounting Review,* Vol. 61, No. 4. pp. 601-632.

Clarkson, P; H. J. Douglas, R Gordon and T, Rex, (2011),'The impact of IFRS adoption on the value relevance of book value and earnings', *Journal of Contemporary Accounting & Economics*, Vol. 7, No. 1, pp. 1–17.

Cocheo, S., (2000), 'Performance picture: avoiding efficiency as a religion', American Bankers Association, ABA Banking Journal, Vol. 92, No. 2. S8-9.

Conlon, E.J., and Parks, J.M., (1990), 'Effects of monitoring and tradition on compensation arrangements: An experiment with principal-agent dyads', *Academy of Management Journal*, Vol. 33, No. 3, pp. 603-622.

Corbella, S. and Florio, C., (2010), 'Issues arising for accounting harmonization: The case of stock options in Italy', *Accounting Forum*, Vol. 34, No. 3-4, pp.184-195.

Core, J., and Guay, W., (2001), 'Stock option plans for non-executive employees', *Journal of Financial Economics*, Vol. 61, No. 2, pp. 253-287.

Core, J., Guay, W., and Kothari, S, (2002), 'The economic dilution of employee stock options: Diluted EPS for valuation and financial reporting', *Accounting Review,* Vol.77, No.1, pp.627-652.

Core, J., Guay, W., and Thomas, R., (2005), 'Is U.S. CEO compensation broken', *Journal of Applied Corporate Finance*, Vol. 17, No. 4, pp. 97-104.

Cotter, J. and Zimmer, I., (2003), 'Disclosure versus recognition: The case of asset revaluations', *Asia-Pacific Journal of Accounting and Economics*, Vol. 10, No, 1, pp. 81-99.

Davis-Friday, P., Liu, C. and Mittelstaedt, H., (2004), 'Recognition and disclosure reliability: Evidence from SFAS No. 106'. *Contemporary Accounting Research*, Vol. 21, No.2, pp. 399-430.

Davis-Friday, P., Folami, L., Liu C., and Mittelstaedt. H., (1999), 'The value relevance of financial statement recognition vs. disclosure: Evidence from SFAS No. 106', *The Accounting Review*, Vol. 74, No. 4, pp. 403-423.

De Angelis, D., and Grinstein, Y., (2015), 'Performance terms in CEO compensation contracts', *Review of Finance*, Vol. 19, No. 2, pp. 619-651.

Dearman, D., and Shields, M., (2005), 'Avoiding accounting fixation: Determinants of cognitive adaptation to differences in accounting method', *Contemporary Accounting Research*, Vol. 22, No. 2, pp. 351-384.

Dechow, P., A. Hutton and R. Sloan, (1996), 'Economic consequences of accounting for stock-based compensation', *Journal of Accounting Research*, Vol. 34 (Suppl.) pp.1–20.

Derieux, S.A., (1994), 'Stock compensation revisited', *Journal of Accountancy*, Vol. 177, No. 2, pp. 39-41.

Devalle, A., Onali, E., and Magarini, R, (2010),'Assessing the value relevance of accounting data after the introduction of IFRS in Europe', *Journal of International Financial Management & Accounting*, Vol. 21, No. 2, pp. 85-119.

Dhaliwal, D., (1986), 'Measurement of financial leverage in the presence of unfounded pension liabilities', *The Accounting Review*, Vol. 61, No. 4, pp. 651-661.

Dhar, S. and De, S., (2011), 'Stock option compensation: Impact of expense recognition on performance indicators of companies listed in India', *International Journal of Commerce and Management*, Vol. 21, No. 2, pp. 122-142.

Djankov, S., La Porta, R., Lopez-de-Silanes, F., and Shleifer, A., (2008), 'The law and economics of self-dealing', *Journal of Financial Economics*, Vol. 88, No.1, pp. 430–465.

Doerr, J. D., and Frederick, W. S., (2002), 'Leave options alone', *New York Times*, April 5.

Doorey, S., and Pearlman, M., (2004), 'Ups and downs'. *Chartered Secretary*, May 12-15.

Easterby-Smith, M., Thorpe, R. and Jackson, P., (2008), '*Management research*', 3rd ed., London: Sage.

Easton, P. D., and Sommers, G. A., (2003), 'Scale and the scale effect in market-based accounting research', *Journal of Business Finance and Accounting*, Vol. 30, No. (1–2), pp. 25–55.

Eccher, E., Ramesh, K. and Thiagarajan, S., (1996), 'Fair value disclosures by bank holding companies', *Journal of Accounting and Economics*, Vol. 22, No.1-3, pp.79-117.

Eisenhardt, K. M., (1989), 'Agency theory: An assessment and review', *Academy of Management Review*, Vol.14, No. 1, pp. 57-74.

El-Gazzar, S. M. and Finn, P. M., (1998), 'Economic implications of proposed accounting for stock-based compensation', *Atlantic Economic Journal*, Vol. 26, No. 3, pp. 259-273.

Espahbodi, H., Espahbodi, P., Rezaee, Z., Tehranian, H., (2002), 'Stock price reaction and value relevance of recognition versus disclosure: the case of stock-based compensation', *Journal of Accounting and Economics*, Vol. 33, No.3, pp. 343-373.

European Central Bank (ECB), (2013), 'Banking structures report', November, Available at https://www.ecb.europa.eu/pub/pdf/other/bankingstructuresreport201311en.pdf.

European Commission, Enterprise Directorate-General, (2003), 'Employee stock options, The legal and administrative environment for employee stock options in the EU, Final Report of the Expert Group.

Ewert, R. and Wagenhofer, A., (2011), 'Earnings quality metrics and what they measure', working paper, Available online at SSRN: http://ssrn.com/abstract=1697042.

Farber, D. F., Johnson, M. F., and Petroni, K. R, (2007), 'Congressional intervention in the standard-setting process: an analysis of the stock option Accounting Reform Act of 2004', *Accounting Horizons*, Vol. 21, No.1, pp.1-22.

FASB, (1980), Statement of Financial Accounting Concepts No. 2: *Qualitative characteristics of Accounting Information*, Norwalk, CT: Financial Accounting Standards Board.

FASB, (1984), Statement of Financial Accounting Concepts No. 5: *Recognition and Measurement in Financial Statements of Business Enterprises*, Norwalk, CT: Financial Accounting Standards Board.

FASB, (1995), Statement of Financial Accounting Standards 123: *Accounting for Stock-Based Compensation*, Norwalk, CT: Financial Accounting Standards Board.

FASB, (2004), Statement of Financial Accounting Standards 123 (Revised 2004): *Share-based payment*, Norwalk, CT: Financial Accounting Standards Board.

Feltham, G. and Ohlson, J., (1995), 'Valuation and clean surplus accounting for operating and financial activities', *Contemporary Accounting Research*, Vol. 11, No.1, pp. 689-731.

Ferri, F. and Sandino, T. (2009), 'The impact of shareholder activism on financial reporting and compensation: the case of employee stock options expensing', *The Accounting Review*, Vol. 84, No.2, pp. 433-466.

Ferri, F., G. Markarian and T. Sandino, (2005), 'Stock options expensing: Evidence from shareholders' votes', working paper, Harvard Business School.

Francis, J, and K. Schipper, (1999),'Have financial statements lost their relevance?', *Journal of Accounting Research*, Vol. 37, No. 2, pp. 319-352.

Francis, J., LaFond, R., Olsson, P., Schipper, K., (2004), 'Costs of equity and earnings attributes', *The Accounting Review*, Vol. 79, No. 4, pp. 967-1010

Frederickson, J., F. Hodge and J. Pratt, (2006), 'The evolution of stock option accounting: disclosure, voluntary recognition, mandated recognition, and management disavowals', *The Accounting Review*, Vol. 81, No.1, pp.1073-1093

Frydman, C. and Jenter D., (2010), 'CEO compensation', *Annual Review of Financial Economics*, Vol. 2, No. 1, pp. 75-102.

Greene, W. H., (2002), '*Econometric analysis*', New York, NY: Prentice Hall.

Guay, W. R., Kothari, S. P., and Sloan, R. G., (2003), 'Accounting for employee stock options', *American Economic Review*, Vol. 93, No. 2, pp. 405–409.

Gujarati, D. N., (2009), "Basic econometrics, McGraw-Hill Iwrin, Boston.

Hagopian, K., (2006), 'Point of view: Expensing employee stock option is improper accounting', *California Management Review*, Vol.48, No.4, pp. 136-156.

Hall, B. and Murphy, K. (2003), 'The trouble with stock options', *Journal of Economic Perspectives,* Vol. 17, No. 3, pp. 49-70.

Hallebone, E., and Priest, J. (2009), '*Business and Management Research*', Basingstoke: Palgrave Macmillan.

Hanlon, M., S. Rajgopal and T. Shevlin (2003), 'Are executive stock options associated with future earnings?', *Journal of Accounting and Economics*, Vol. 36, Nos. 1-3, pp. 3-43.

Harris, M. and Raviv, A., (1979), 'Optimal incentive contracts with imperfect information', *Journal of Economic Theory*, Vol. 20, No. 2, pp. 231-259.

Harter, C.I. and Harikumar, T., (2002), 'Accounting for option-based compensation: The economic cost approach', *Journal of Business Finance and Accounting*, Vol. 29, No.7-8, pp. 1007-1022.

Hayes, A. F., (2013), *'Introduction to mediation, moderation, and conditional process analysis: A regression-based approach'*, The Guilford Press; New York, NY: 2013.

Healy, P. and Palepu, K., (2001), 'Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature', *Journal of Accounting and Economics 31*, Vol. 31, No. 1-3, pp.405-440.

Hemmer, T., Kim, O., Verrecchia, R.E., (1999), 'Introducing convexity into optimal compensation contracts', *Journal of Accounting and Economics*, Vol. 28, No.1, pp. 307-327.

Hess, K. and Francis, G. (2004), 'Cost income ratio benchmarking in banking: a case study', *Benchmarking: An International Journal*, Vol. 11, No. 3, pp.303-319.

Hill, N., S. Shelton and K. Stevens, (2002), 'Corporate lobbying behavior on accounting for stock-based compensation: Venue and format choices', *Abacus,* Vol. 38, pp.78-90.

Hirshleifer, D., Teoh, S., (2003), 'Limited attention, information disclosure, and financial reporting', *Journal of Accounting and Economics,* Vol. 36, No.1 pp. 337-386.

Hirst, E., Hopkins, P., and Wahlen. J., (2004), 'Fair values, income measurement, and bank analysts' risk and valuation judgments', *The Accounting Review,* Vol. 79, No. 2, pp.453-472.

Hirst, E., and Hopkins. P., (1998), 'Comprehensive income reporting and analysts' valuation judgments', *Journal of Accounting Research,* Vol. 36, Supplement, pp. 47-75.

Hobson, J., and Kachelmeier. S., (2005), 'Strategic disclosure of risky prospects: A laboratory experiment', *The Accounting Review,* Vol. 80, No. 3, pp. 825-846.

Hodder, L., W. Mayew, M. McNally, and C. Weaver, (2006), 'Employee stock option fair-value estimates: Do managerial discretion and incentives explain accuracy?', Contemporary *Accounting Research,* Vol. 23, No. 4, pp. 933-975.

Holden, C., and Kim, D., (2013), 'Performance share plans: valuation, optimal design, and empirical tests', working paper, University of Indiana.

Holmström, B., (1979), 'Moral hazard and observability', *Bell Journal of Economics,* Vol. 10, No. 1, pp. 74-91.

Holthausen, R. W., and Watts, R. L., (2001), 'The relevance of the value-relevance literature for financial accounting standard setting', *Journal of Accounting & Economics,* Vol. 31, No. (1–3), pp. 3-75.

Hopper, T and Powell, A., (1985), 'Making sense of research into the organizational and social aspects of management accounting: A review of its underlying assumptions', *Journal of Management Studies,* Vol. 22, No. 5, pp. 429-465.

Hull, J., (2012), '*Options, futures, and other derivatives*' (8th ed.), Upper Saddle River, NJ: Pearson Education.

Hung, M., (2001), 'Accounting standards and the value relevance of financial statements: an international analysis', *Journal of Accounting and Economics*, Vol. 30, No.3, pp. 401–420.

Imhoff, E., R. Lipe and D. Wright, (1993), 'The Effects of recognition versus disclosure on shareholder risk and executive compensation', *Journal of Accounting, Auditing and Finance*, Vol. 8, No. 4, pp. 335-368.

Imhoff, E., R. Lipe and D. Wright, (1995), 'Is footnote disclosures an adequate alternative to financial statement recognition?', *Journal of Financial Statement Analysis* Vol.1, (Fall), pp.70-81.

International Accounting Standards Board (IASB) (1989), '*Framework for the preparation and presentation of financial statements*', International Accounting Standards Committee Foundation, London.

International Accounting Standards Board (IASB), (2004), *International financial reporting standard IFRS No. 2, share based payment*, London: International Accounting Standards Board.

Ittner, C.D., Larcker, D.F., and Rajan, M.V., (1997), 'The choice of performance measures in annual bonus contracts', *The Accounting Review*, Vol. 72, No.2, pp. 231-255.

Jensen, M. and Meckling, W., (1976), 'The Theory of the firm: Managerial behavior, agency costs and ownership structure', *Journal of Financial Economics*, Vol. 3, No. 4, pp. 305- 360.

John, K., Saunders, A., Senbet, L.W., (2000), 'A theory of bank regulation and management compensation', *Review of Financial Studies*, Vol. 13, No.1, pp.95-125.

Johnson, L. T, (1992), 'Research on disclosure', *Accounting Horizons*, Vol. 6, No. 1, pp. 101-103.

Johnson, L. T., and Storey., R. K., (1982), 'Recognition in financial statements: Underlying concepts and practical conventions. Stamford, CT: Financial Accounting Standards Board.

Johnston, D., (2006), 'Managing stock option expense: The manipulation of option pricing model assumptions', *Contemporary Accounting Research*, Vol. 23, No. 2, pp. 395-425.

Kanagaretnam, K., Lim, C. Y. & Lobo, G. J., (2014), 'Effects of international institutional factors on earnings quality of banks', *Journal of Banking & Finance,* Vol. 39, Feb., pp.87-106.

Kaplan, RS., and Norton, D.P., (1992), 'The balanced scorecard-measures that drive performance', *Harvard Business Review*, January-February, pp. 71-9.

Kaplan, R.S. and Norton, D.P., (1993), 'Putting the balanced scorecard to work', *Harvard Business Review*, September-October, pp. 134-47.

Kedia, S. and Mozumdar, A., (2002), 'Performance impact of employee stock options', Working Paper series, American Finance Association (AFA), 2003 Washington, DC Meetings.

Kim, S., (2003), 'Research paradigms in organizational learning and performance: Competing modes of inquiry', *Information Technology, Learning, and Performance Journal*, Vol. 21, No.1, pp. 9-18.

Koonce, L., McAnally, M., and Mercer, M., (2005), 'How do investors judge the risk of financial items?', *The Accounting Review*, Vol. 80, No. 1, pp. 221-241.

Kothari, S. P., Zimmerman, J. L., (1995), 'Price and return models', '*Journal of Accounting and Economics*, Vol.20, No.1, pp.155-192.

Kothari, S.P., (2001), 'Capital markets research in accounting', *Journal of Accounting and Economics*, Vol. 31, No. 1, pp. 105-231.

Kothari, C. R., (2004), '*Research methodology: Methods and techniques*', 2nd Ed., New Delhi: New Age International limited.

Kruse D., (2002), Research evidence on prevalence and effects of employee ownership, Testimony before the subcommittee on employer- employee relations, Committee on education and the workforce, US House of Representatives, February 13.

Kruse, D., and Blasi, J., (1997), 'Employee ownership, employee attitudes, and firm performance: A Review of the evidence', In David Lewin, Daniel J.B. Mitchell, and Mahmood A. Zaidi, eds., *Human Resources Management Handbook, Part 1*. Greenwich, CT, JAI Press.

Kuhn, T. S., (1996), '*The structure of scientific revolutions*'. 3rd ed., Chicago, IL: University of Chicago press.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R., (1997), 'Legal determinants of external finance'. *Journal of Finance*, Vol. 52, pp. 1131–1150.

La Porta, R., Lopez-de-Silanes, F., and Shleifer, A., (2006), 'What works in securities laws?', *Journal of Finance*, Vol. 61, pp.1–32.

Lambert, R. A, Larcker, D., Verrecchia, R., (1991), 'Portfolio considerations in valuing executive Compensation', *Journal of Accounting Research*, Vol. 29, No.1, pp.129-149.

Lambert, R. A. (2001), 'Contracting theory and accounting', *Journal of Accounting and Economics*, Vol. 32, No. 1-3, pp.3-87.

Landau, I., Mitchell, R., O'Connell, A., and Ramsay, I., (2007), 'Employee share ownership in Australia: Theory, evidence, current practice and regulation', *UCLA Pacific Basin Law Journal*, Vol. 25, No. 1, pp. 25-132.

Landsberg, R.D., (2004), 'Stock option valuation and planning opportunities', Journal of Financial Service Professionals, Vol, 58, No. 6, pp.30–32.

Larcker, D. F., (1983), 'The association between performance plan adoption and corporate capital investment, *Journal of Accounting and Economics*, Vol. 5, No. 1, pp. 3-30.

Laughlin, R., (1995), 'Empirical research in accounting: Alternative approaches and a case for "middle-range" thinking', *Accounting, Auditing and Accountability Journal*, Vol. 8, No.1, pp. 63-87.

Lee, A., (1991), 'Integrating positivist and interpretive approaches to organizational research', *Organization Science*, Vol. 2, No. 4, p.342-365.

Lee, E., Walker, M., Christensen, H. B., and Zhao, R., (2010), 'Mandating IFRS: Its impact on the cost of equity capital in Europe', *Journal of International Accounting Research*, Vol. 9, No. 1, pp. 58-59.

Li, H., (2003), 'Employee stock options, residual income valuation, and stock price reaction to SFAS footnote disclosures', working paper, University of Iowa.

Libby, R., Nelson, M., and Hunton, J., (2006), 'Recognition vs. disclosure, auditor tolerance for misstatement, and the reliability of stock-compensation and lease information', *Journal of Accounting Research*, Vol. 44, No. 3, pp.533-560.

Malkiel, B. G., and Baumol, W. J., (2002), 'Stock options keep the economy afloat', *Wall Street Journal* (April 4), A18.

Maines, L., and McDaniel. L., (2000), 'Effects of comprehensive-income characteristics on nonprofessional investors' judgments: The role of financial statement presentation format', *The Accounting Review*, Vol. 75, No. 2, pp. 179-207.

Matsunaga, S. R., (1995), 'The effects of financial reporting costs on the use of employee stock options', *The Accounting Review*, Vol. 70, No.1, pp. 1-26.

Mayers, D., and Smith, C., (1992), 'Executive compensation in the life insurance industry', *Journal of Business*, Vol. 65, pp. 51-74.

Mehran, H. and Rosenberg. J., (2009), 'The Effect of CEO stock options on bank investment choice, borrowing, and capital', Working paper, Federal Reserve Bank of New York, Staff report No. 305

Melissa B. F., (2004), 'Equity-based compensation for employees: Firm performance and determinants', *Journal of Financial Research,* Vol. 27, No.1, pp.31-54.

Mock, S., (2005), 'Accounting for stock-based compensation', '*European Business Law Review*, Vol.16, No. 2, pp. 359-378.

Murphy, K.J., (1999), 'Executive compensation', In: Orley, A., David, C. (Eds.), *Handbook of Labor Economics*, Vol. 3. North-Holland, Amsterdam.

Myers, S. C., (1977), 'Determinants of corporate borrowing', *Journal of Financial Economics,* Vol. 5, No. 2, pp. 147-175.

Nelson, K., (1996), 'Fair value accounting for commercial banks: An empirical analysis of SFAS No. 107', *The Accounting Review*, Vol. 71, No.2, pp.161-182.

Neuman, W.L., (2003), '*Social Research Methods: Qualitative and Quantitative Approaches*', 5th ed., Boston: Allyn and Bacon.

Niu, F., and Xu, B., (2009), 'Does recognition versus disclosure really matter? Evidence from market valuation of recognition of employee stock option expenses', *Asia Pacific Journal of Accounting and Economics*, Vol. 16, No. 2, pp. 215-233.

Nobes, C. and Parker, R., (2013), "*Comparative international accounting",* (12th Ed.), Harlow: Prentice Hall, Financial Times.

Ohlson, J., (1995), 'Earnings, book values, and dividends in equity valuation', *Contemporary Accounting Research,* Vol. 11, No.1, pp. 661-687.

Pendleton, A., Poutsma, E., Blasi, J., Kruse, D. and Sesil, J., (2002), 'Theoretical study on stock options in small and medium Enterprises', Final Report to the Enterprise-Directorate General, Commission of the European Communities, Electronic copy available at: http://ec.europa.eu/enterprise/policies/sme/files/support_measures/stock_options/theoretical_study_en.pdf.

PricewaterhouseCoopers (2002), Employee Stock Options in the EU and the USA, London, http://europa.eu.int/comm/enterprise/entrepreneurship/support_measures/stock_options/study.htm.

Rappaport, A. (1998), '*Creating Shareholder Value- A guide for managers and investors',* (2nd ed.), New York: The Free Press.

Ratliff, P.A, (2005), 'Reporting employee stock option expenses: Is the debate over?', *The CPA Journal*, Vol. 75, No. 11, pp. 38-43.

Ratnesar, R., (2000). 'The Get rich quick option', Time, Mar 13 Available at: http://content.time.com/time/world/article/0,8599,2056178,00.html.

Rees, R. (1985), 'The theory of principal and agent: Part I', *Bulletin of Economic Research,* Vol. 37, No. 1, pp. 3-26.

Rees, L. and Stott, D., (2001), 'The value relevance of stock-based employee compensation disclosures', *The Journal of Applied Business Research*, Vol. 17, No. 2, pp. 105-116.

Rouse, R.W., Barton, D.N., (1993), 'Stock compensation accounting', *Journal of Accountancy*, Vol. 175, No. 6, pp. 67-70.

Ross, S. A., (1973), 'The economic theory of agency: The principal's problem', *American Economic Review*, Vol. 63, No. 2, pp.134-139.

Ryan, B., Scapens, R. and Theobald, M., (1992), '*Research method and methodology in finance and accounting*', London: Academic Press Inc.

Sacho, Z.Y. and Oberholster, J.G.I., (2005), 'Should the IASB consider exercise date accounting for outstanding employee share options?', *Meditari Accountancy Research,* Vol.13, No.2, pp. 89-106.

Sahlman, W. A., (2002), 'Expensing options solves nothing', *Harvard Business Review*, Vol. 80, No. 12, pp. 90-96

Saiz, J., (2003), 'Expensing the cost of executive option schemes: Case studies in the Australian healthcare industry', *Journal of Law and Financial Management*, Vol.2, No.1, pp.15-28.

Sappington, D. E. (1991), 'Incentives in principal-agent relationships', *Journal of Economic Perspectives*, Vol. 5, No. 2, pp. 45-66.

Saunders, A., Strock, F., and Travlos, N., (1990), 'Ownership structure, deregulation and bank risk-taking', *Journal of Finance*, Vol. 45, pp.643-654.

Saunders M., Lewis, P. and Thornhill, A., (2009), '*Research Methods for Business Students*', 5th ed., Essex: Pearson Education Ltd.

Schiemann, F. and Guenther, T., (2013), 'Earnings predictability, value relevance, and employee expenses', *The International Journal of Accounting*, Vol. 48, No. 2, pp. 149-172.

Schipper, K., (1994), 'Academic accounting research and the standard setting process', *Accounting Horizons*, Vol. 8, No. 4, pp. 61-73.

Schroeder, R., and Schauer, D. A., (2008), 'SFAS No. 123R: The controversy and its economic consequences', *Managerial Auditing Journal*, Vol. 23, No. 3, pp.295-306.

Schwimmer, R.I., (2004), 'The high-tech community must surrender on accounting for options', *The CPA Journal*, Vol. 74, No. 2, pp. 17-19.

Seethamraju, C., and Zach. T., (2004), "Expensing stock options: The role of publicity", Working paper, Available at SSRN: http://ssrn.com/abstract=461760.

Shiwakoti, R., and Rutherford, B., (2010), 'Expensing of share-based payments and its impact on large UK companies', *The British Accounting Review*, Vol. 42, No. 4, pp. 269-279.

Skinner, D. J. (1996), 'Are Disclosures about bank derivatives and employee stock options 'value relevant'?', *Journal of Accounting and Economics*, Vol. 22, pp. 393-405.

Smith, C., and Watts, R., (1992), 'The investment opportunity set and corporate financing, dividend and compensation policies', *Journal of Financial Economics*, Vol. 3, No.1, pp. 263-292.

Stiroh, K., (2004), 'Diversification in banking: Is noninterest income the answer?', *Journal of Money, Credit, and Banking*, Vol. 36, No. 5, pp. 853-882.

Story, L. and Dash.E, (2009), 'U.S. weighs how to let banks give money back', *New York Times*, (May 19), p. B1.

Street, D. and Cereola, S., (2004), 'Stock option compensation: impact of expense recognition on performance indicators of non-domestic companies listed in the U.S.', *Journal of International Accounting, Auditing and Taxation*, Vol. 13, No.1, pp. 21-37.

Subramaniam, C. and J. Tsay, (2012), 'Mandated recognition of employee stock option expense-The case of Canada', *Journal of International Financial Management & Accounting*, Vol. 23, No. 1, pp. 62-9.

Svennevig, J., (2001), 'Abduction as a methodological approach to the study of spoken interaction', *Norskrif*, Vol. 103, No.1, pp.1-22.

The Emergency Economic Stabilization Act of 2008, Pub. L. No. 10-343, 12 Stat. 3765-393.

Vance, D., (2011), 'A meta-analysis of empirical materiality studies', *The Journal of Applied Business Research*, Vol.27, No.5, pp. 53-72.

Veith, S and R. Werner, (2014), 'Comparative value relevance studies: Country differences versus specification effects', *The International Journal of Accounting*, Volume 49, No. 3, pp. 301-330.

Walker, D., (2009), 'A review of corporate governance in UK banks and other financial industry entities- Final recommendations', 16 July 2009, https://www.governance.co.uk/resources/item/256-webarchivenationalarchivesgovuk-%20-http-wwwhm-treasurygovuk-d-walker_review_261109pdf.

Welman, C., Kruger, F., and Mitchell, B. (2005), '*Research Methodology*', Oxford: Oxford University Press.

White, H., (1980), 'A heteroskedasticity-consistent covariance matrix and a direct test for heteroskedasticity', *Econometrica*, Vol. 48, No. 4, pp. 817-838.

Willis, J.W. (2007), '*Foundation of qualitative research: Interpretive and critical Approaches*', London: Sage.

Yermack, D., (1995), 'Do corporations award CEO stock options effectively?', *Journal of Financial Economics*, Vol. 39, No(2-3), pp. 237–269

Zhang, T., (2005), 'Pricing effects of recognition versus disclosure: Evidence from firms' recognition of employee stock option expense', Working Paper, Berkeley: University Of California.